Textile World

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AUGUST, 1938

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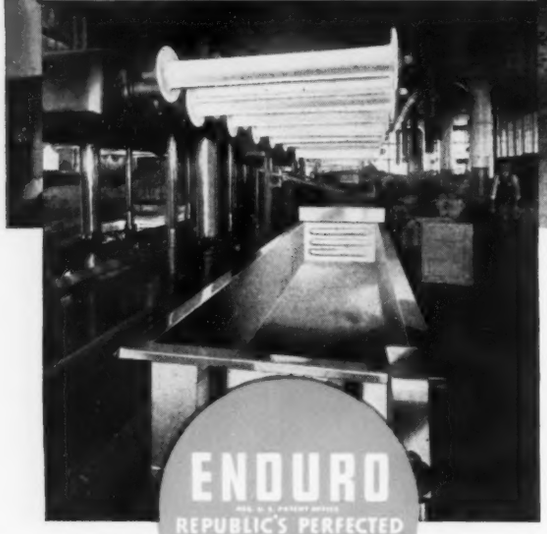
..IN THE MILL



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Textile World

AUGUST, 1938

DOUGLAS G. WOOLF, *Editor*

Telling the World

EVERY little while, somebody gets excited about the "pressure" brought to bear by interested groups upon the press and other media in an attempt to influence public opinion. Just recently the disclosure that a steel company made such an attempt, in an organized way, was noted with horror by many of our best viewers-with-alarm.

Now we are not familiar with the details of this case, and consequently are not passing judgment, one way or the other, on the methods used. However, we are intrigued, as always, by the naivete of those who discover a new menace in an age-old practice.

It has gotten to the point where "propaganda" is regarded as something satanic. If so, then this is a very devilish world. Because a large part of the spoken or written word is propaganda—in different degrees and varying forms.

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The editor himself—about whose virtue there is expressed so much concern—is a propagandist by profession. One of his major jobs is to propagate a certain type of thinking in which he believes. If, in turn, he can't distinguish between the good and the bad, in the attacks which "pressure" groups make upon him—well, he just isn't much of an editor and not worth worrying about.

In fact, if we have a criticism to make of the textile industry, it's that it doesn't employ propaganda sufficiently. It doesn't tell the world enough about itself. As a result, the world doesn't know enough about the textile industry—and what it does "know" is too often cock-eyed.

Fortunately, a change is taking place in this respect. More and more textile men are becoming public-relations conscious. Take just this past month, for example: Herman Cone, president of Proximity Mfg. Co., faced with a local labor situation which was based on misunderstanding, took the entire first page of *The Textorian*, his company paper, for a frank, straight-from-the-shoulder statement explaining the wage reduction which had preceded the trouble. The tendency usually is to keep mum, and to allow these sores to fester underneath. Mr. Cone's statement set straight both his employees and the public. It has aroused widespread approval.

During the same month, William L. Barrell Co., Inc., spent some perfectly good money on a *paid* full-page advertisement addressed to the "gentlemen of the cotton textile industry," and asking them this simple question: "Why Sell Under Cost?" After eliminating the buyer, labor, and the Government, in turn, as the makers of under-cost prices, the company asked bluntly: "Isn't the responsibility up to the mill executive who works under the stress of wicked over-production?" A post-script states: "We paid for this advertisement as an earnest attempt to make our industry recognize its own responsibility, to the end that all of us may benefit" . . . That's a short sermon on public relations in itself.

Another bit of evidence which came across our desk just recently was a "picture album" from Dixie Mercerizing Co. designed—according to the accompanying letter—as an effort to humanize its relationships with both its customers and employees. A similar medium has been employed successfully during recent months by a company allied with the textile field—the Crompton & Knowles Loom Works.

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The mention of these cases must not be taken as an implication that they are the sole textile ones. They just happen to be among recent manifestations. We are starting to keep a record of such cases and shall be glad to have them brought to our attention. The textile industry is making progress, although slowly, in this direction.

We expect to have something more to say on this whole subject in a special section in our October issue. Meanwhile, we suggest that our readers get hot and bothered about not enough, rather than too much, propaganda.

THE EDITOR SAYS

The Battle-Lines Are Forming

THE National Labor Relations Board recently held that the circulation of an anti-CIO pamphlet by a certain company was an unfair labor practice as defined by the Wagner Act. A large part of the country evidenced a sense of shock at the news.

What surprised us was that anyone was surprised. Our own experience in attending NLRB hearings has convinced us that examiners, attorneys and others connected with the board would rate the above-mentioned activity as almost a capital crime. We have heard counsel for the board produce evidence of mild little acts, in contrast to which the dissemination of anti-CIO literature is positively heinous.

The result has been that the average employer has become scared to death. The mere mention of a union to his employees becomes a questionable act. He no longer feels that he enjoys freedom of speech. As a matter of fact, many employers don't even dare to answer letters which refer in any way to the Wagner Act. We are not guessing about this; we know.

The board would reply, of course, that it is not responsible for the apprehensions or misapprehensions of employers. However, anyone who had heard some of the charges trotted out at NLRB hearings that we have listened to, would know that the board is very definitely responsible for the state of mind described above.

Not even some of the most ardent critics of the board really know how serious has been the effect of the operation of the act upon industrial relations in the average mill village. That can be gathered only by field work—and particularly by attendance at hearings. Whether the Governor of Iowa was right or wrong legally, he was 100% right in his characterization of the NLRB hearing as a "disturbing factor" in the community.

Fortunately, the avalanche of public opinion will engulf the board and the act. Injustice cannot be practiced openly without eventually arousing the resentment of the average citizen.

The battle-lines are forming—and on the side advocating repeal or radical revision of the Wagner Act at the next session of Congress will be represented employers, employees, and the general public. The members of the board, who have applied administrative bias to a basically unfair act, will not be able to save it. Nor will the CIO, which apparently finds in the act almost a charter. But those groups will fight hard—and the opposition will have to have at its command complete and authentic evidence of the effects of the act upon our national labor situation. That is industry's No. 1 job in connection with the next session of Congress. Employers and employees have an equal stake in its accomplishment.

A New Achievement

THE Print Cloth Group reports that 97½% of the mills which have operated a third shift made declaration that they would eliminate the third shift by July 1; and that an even larger percentage of two-shift mills declared they would not go on to a third shift. Checking this after July 1, the Group found 100% compliance on the part of those mills which had so declared.

That is the latest manifestation of industrial self-government in textile manufacture. It is another reason why so many observers—including this writer—believe that this industry is making greater strides in that direction than any industry in the country.

Congratulations to the Print Cloth Group, as a group, and to its individual members who made this accomplishment possible.

Dr. Charles H. Herty

MUCH as the textile industry—and particularly the southern section of it—will share the national sense of loss at the death of Dr. Charles H. Herty because of the pulp-from-slash-pine development on which he was engaged in the latter years of his life, textile men have another and a more personal cause for grief.

Although never one of the textile industry, Dr. Herty was always very close to it. And he never touched it without leaving the impress of an apostle of research.

One of the greatest of human attributes is that ardent belief in a cause which every little while stamps a man as different from his fellows. Dr. Herty had that in such measure—and his cause was such a good one—that the textile industry must carry on in research, in tribute to his memory.

In Memoriam

THE PROFIT MOTIVE

July, 1938

Interment will be Public

Honorary Pallbearers will be men prominent in the Textile Industry

Please omit flowers

TEXTILE-HIT-OF-THE-MONTH: Arthur Besse, president of National Association of Wool Manufacturers, gets this department's award for effective presentation. The above is from the cover of an obituary bulletin he sent to his members. The deceased is The Profit Motive. Proof of death is in the "profit" record of the industry as compiled from the tax returns of the Bureau of Internal Revenue. $100,000,000 lost in a decade! However, he hesitatingly suggests that there may be a remedy—in this kind of a policy: 1. An honest policy. 2. A policy which presupposes a profit. 3. A policy of sticking to your guns. . . . "Maybe we won't have to hold the funeral after all?" he says in the asking voice. Well, if we don't, you get honorable mention as a funeral exterminator, Arthur.—Editor.

NEWS OF THE MONTH

Confer on Labor Relations

At the conference of Southern Industrial Executives, held at the Battery Park Hotel, Asheville, N. C., July 14, at which over 100 business executives from a wide geographical area were in attendance, Cyrus S. Ching, of the U. S. Rubber Co., and James S. Thomas, president of the Chrysler School of Engineering, were principal speakers. Whether by chance or not, their talks dove-tailed, each carrying the thought that human relations must dominate the future.

While Mr. Ching, recognized as one of the country's foremost authorities on the practical problems of employee relations, treated the present labor-vs-business set-up as a campaign of strategy, of politics, as a tactical game, and advised the surprise method as best in obtaining the final victory, Dr. Thomas reviewed ancient history and took up step by step from days of overwhelming slave-majority to the present time of the assembly line. "And even that is not new," he stated; "Italian sculpture was done on the assembly line hundreds of years ago, and the whole world was amazed at the mass production of marble statuary, all supposedly made by the three geniuses who placed the final touch upon the piece."

Each pointed out in his own fascinating method that industrial relations are based upon constantly changing and local conditions. Therefore there can be no set formula for its proper maintenance but in order to sustain proper industrial relations we must have a permanent relationship based upon three fundamentals: integrity, and character and mutual confidence. When these three phases of labor relationships are practiced by employees and employers alike, then we have the answer to labor "problems."

New Tubize Yarn

With the announcement by Duplan Silk Corp., New York, of a new fabric, "Evergrand," it became known that Tubize Chatillon Corp. had given Duplan exclusive rights to its new "No. 33 Acetate" rayon yarn. This is the first of a series of new yarns to be offered by Tubize and it was developed jointly by Duplan and Tubize working together for two years. The chief feature of the new yarn is that certain of the filaments are cut at regular intervals throughout the length of the yarn. This results in short protruding filaments, which give a "clothy" appearance when the yarn is woven into fabric.

Upholds "Ringless" Invalidation

With the confirmation by the U. S. Circuit Court of Appeals July 24 of the Federal Court decision invalidating Chas. A. Kaufman's "ringless" hosiery patent, the only recourse left for the Textile Patents Corp., and the hosiery manufacturers supporting the patent was to carry the case to the U. S. Supreme Court through a writ of certiorari. At time of going to press, it was not indicated whether this step would be taken.

Approve Yarn Rules

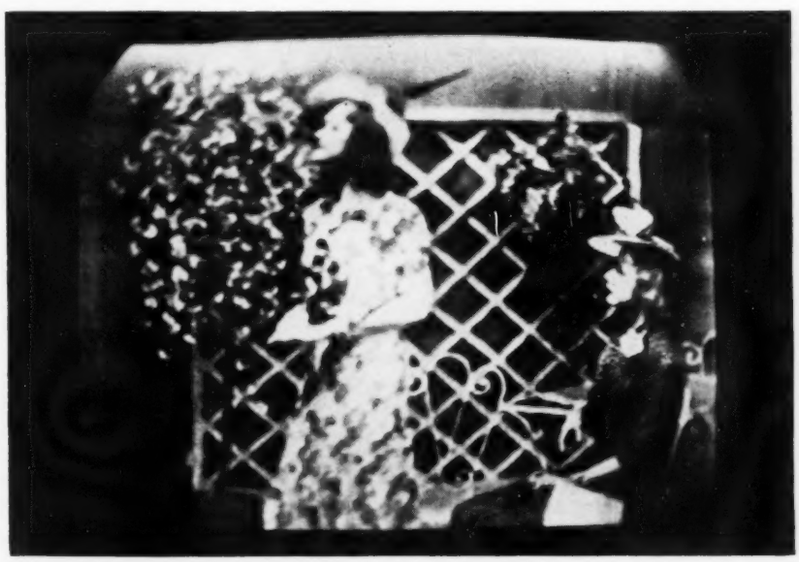
Representatives of the Carded Yarn Group and the Southern Combed Yarn Spinners Association, meeting in Charlotte, Aug. 3, approved the latest draft of proposed Cotton Yarn Rules of 1938, and recommended that the rules be reprinted and distributed to membership of both groups as a preliminary to later meetings at which individual adoption of these rules will be solicited.

New Synthetic Yarn Development Stage

Samples of "Fiber 66"—an entirely new type of synthetic yarn developed by E. I. du Pont de Nemours & Co., Inc. — and women's full-fashioned hosiery knitted from this material are attracting considerable interest in the trade. Although the new product is still in the development stage and no official statements have been issued regarding its properties, knitters and other textile men who have had an opportunity to examine the yarn are impressed with its high tensile strength and elasticity. Hosiery made experimentally from "Fiber 66" and subjected to wear tests is said to have a remarkably long life. Du Pont has not announced the chemical constituents of the new yarn, but it is known that it is not produced from a cellulose base.

U.-K. Agreement Status

Because of the trend of world affairs the British have made more concessions to the United States in the pending trade agreement than were expected when negotiations began, our Washington office reports. As the work on the agreement pro-



TELEVISING TEXTILES—The progress being made in televising textiles was effectively demonstrated recently at a television fashion show, presented by National Broadcasting Company from its studios R C A Building, New York. The show highlighted vacation apparel. While still far from the clarity needed for commercial textile promotion, it evidenced a real advance over television fashion shows of recent years. Fabrics featured included woolens, silks, and rayons. The above photograph shows the fashion display as seen by the television audience. This photograph was taken at McGraw-Hill Building, New York, where the show was witnessed on an experimental receiving set.

gressed, developments in European affairs made it highly desirable for the British to strengthen their ties with the United States, and the State Department is suspected of having taken full advantage of that situation.

Despite rumors that obstacles had arisen which threatened the consummation of the agreement, the State Department will not admit that there is any need to revise the guess as to its completion beyond the end of August, but it is also pointed out at the Department that there is nothing tangible upon which to base an estimate.

It is understood that some of the most controverted items have been left to the last—and that textiles is one of these. Our Washington office states that it may possibly be September before everything is cleaned up, but that nothing which really threatens the agreement has arisen.

Gorman Quits TWOC

Francis J. Gorman, who was president of the United Textile Workers of America, which merged with the TWOC, of the CIO, has resigned from the later organization, according to statement credited to him. This was said to have been made in connection with a split between the TWOC and the Federation of Woolen and Worsted Workers of America, in New England. The latter, which agreed to be absorbed into TWOC some time ago, is understood to be re-establishing its own identity. Reasons for Mr. Gorman's resignation from TWOC had not been announced as this issue went to press.

Fibers Distinguished By Their "Cry"

Highly interesting experiments in acoustically distinguishing textile materials were demonstrated before the International Congress of Color Chemists meeting at Konstanz, recently. In tearing, wool fibers make a sound quite different from that caused by tearing cotton fiber, high-quality flax produces a different sound from that of low grade flax, and denier rayon "cries" differently from viscose staple fiber. In investigating this theory, Prof. Jovanovits intensified the different sounds by amplification and adapted optical and electronic instruments by which the sounds are presented in charts and curves. The sounds, transmitted from Prof. Jovanovits' laboratory to the Theatre of Konstanz, where the Congress met, varied from deafening explosions, the roaring of lions, to the rumbling of trains or the squeak of rusty nails on glass.

To Operate Mill In Brazil

Joseph C. Cobb, formerly with Chiquola Mfg. Co. and recently elected vice-president of the Southern Textile Association, is scheduled to sail in the fall for Sao Paulo, Brazil, where he will be in charge of a cotton-yarn spinning mill to be erected under his supervision. American interests are sponsoring the venture. The mill is to be equipped with 10,000 spindles of American make designed to spin from 60s to 120s combed yarn from Brazilian cotton. Building and equipment will be new throughout.

Silk Trade Divided On Proposed Rules

Out of 1,200 fabric and other silk manufacturers questioned by the National Federation of Textiles, a majority have disapproved of the weighting provision included in the trade rules recently submitted to the industry by the Federal Trade Commission. This provision requires that percentage of weighting be given on all weighted fabrics. The National Federation opposes this rule as misleading and urges a substitute provision by which fabrics having any metallic content would be simply labelled "weighted" without percentage specified. The proposed rules, which generally are the same as those originally prepared by the industry, were the subject of a public hearing by the Federal Trade Commission at Washington, Aug. 2.

A READY-MADE TEXTILE TUBING of one size that will expand or contract exactly to fit packages of several different sizes (in any length) has been developed by Bemis Bro. Bag Co., Brooklyn, N. Y., trade named "Tite-Fit Tubing". This tubing is put up in rolls, is made of burlap, and already has replaced burlap piece goods as a wrapping for textiles, rubber hose, wire and rugs, in a number of plants. The material might be made of cotton if desired and represents a new adaptation of textiles for wrapping purposes. Hand sewing, such as required when wrapping with ordinary piece goods, is entirely eliminated, says the manufacturer; only one-third to one-fifth of the time is required. Operator slips the tubing over the top of the package, fastens it with a wire tie at the bottom, pulls up on the sides to take out the slack, fastens with a wire tie at the top, and cuts the tubing off above the top tie. As the tubing is not cut until the package is complete there is no waste. Illustration shows new tubing in use on right and similar package on left wrapped from flat piece goods.

Circular Machine Fashions Hosiery

Completion of an improved circular knitting machine which can produce full-fashioned hosiery substantially like that now made on full-fashioned machines was reported last month. The new machine is patented under grant No. 2, 215, 197 issued to Arthur Pass and assigned to Scott & Williams, machinery manufacturers, New York.

WPA Buys Garments

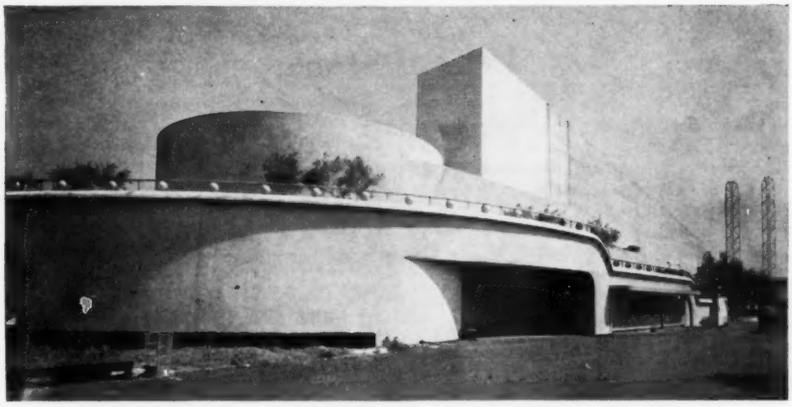
Procurement Division, U. S. Treasury Dept., which has been buying for WPA, has ordered 1,001,546 units of men's coats and suits at total cost of $8,312,574. The garments will be handed out to men on relief. This purchase, it is said, has cleaned up market surplus of garments below $30 retail mark.

Bancroft Develops New Marquisette

Development of a new type of marquisette which remains lustrous and crisp after repeated washings is announced by Joseph Bancroft & Sons Co., Wilmington, Del. The fabric, called "Eversheer" marquisette, is produced by a patented permanent finishing process which is said to impart a fine luster and crispness and, at the same time, to remove the fuzz from the cloth.

Rust Picker Plant

John Rust, co-inventor with his brother Mack, of a mechanical cotton picker, has announced plans to build a plant in Memphis, Tenn., this fall for the manufacture of the pickers. The plant will have a capacity of about 1,000 machines a year at the start, Mr. Rust said, and will be completed by the first of the year in time for production for the 1939 picking



The Textile Building at the New York World's Fair, as it appears today

season. At present the machines are being made on a small scale. About six machines will be ready for operation this season on selected plantations.

Census Values Rayon at $254,697,216

The value of products made by rayon yarn and allied industries in 1937 was 37.6% above 1935, according to preliminary figures of the Biennial Census made public by the Bureau of the Census of the Department of Commerce. The 1937 products had a value of $254,697,216 against $185,159,534 in 1935. Rayon yarn produced in 1937 totaled 321,680,725 lb. valued at $204,790,613, the figures show. Wages and wage earners rose from $50,693,182 and 50,550 respectively in 1935 to $65,291,053 and 55,098 in 1937, making respective increases of 28.8% and 9.0%.

Woolen Co. Loss

American Woolen Co., New York, on Aug. 3 reported a total loss of $4,750,487 for the first six months of 1938, compared with a net profit of $3,393,552 for the first six months of 1937. The loss was ascribed to the small volume of business and the continued decline in prices. Sales were $16,746,242 against $45,284,752 in 1937.

Southern Hosiery Meeting Sept. 16-17

Labor problems presented in the current legislative situation will be a chief topic of discussion at the annual convention of the Southern Hosiery Manufacturers' Association to be held at Grove Park Inn, Asheville, N. C., Sept. 16-17. Taylor R. Durham, executive secretary, said the gathering would be one of the most important in the history of the association.

Market Rayon Passenger Car Tires

Rayon tires made of Cordura yarn, produced by the Rayon Division, E. I. du Pont de Nemours & Co., now are being promoted to the passenger car market. These tires are sold by U. S. Rubber Co., and Goodyear Tire & Rubber Co. "Strength-with-lightness" is stressed in the promotional material which addresses itself to the general consuming public.

Converters to End Agreement

The Textile Converters Association of America has notified the Textile Workers Organizing Committee, Local 65, of the association's desire to end its agreement with the TWOC, Sept. 19. According to the converters, certain terms of the contract, which was signed May 19, 1937, "are too onerous for the industry." In a letter to the trade, the association points out that those members who have separate contracts and desire to terminate them must forward their own registered letters of termination.

Japan Distributes Silk Library Here

The Raw Silk Intelligence Bureau of the Japanese Government this month distributed to raw silk importers, silk manufacturers, wholesalers and others, complete sets of a 4-volume photographic library on "Raw Silk Industry of Japan." This pictorial presentation of the Japanese silk industry comprises several dozen art photographs, given in the following volumes: (a) Production of Silk Worms and Eggs; (b) Breeding of Silk Worms; (c) Manufacture of Raw Silk and (d) Conditioning and Shipment of Raw Silk.

Japan Pact Renewed

The arrangement under which the Association of Japanese Exporters of Cotton Piece Goods agrees to limit yearly exports to the Philippines has been continued for a year in modified form, according to the State Department. The important modification is that the annual quota of 45,000,000 sq. meters of cotton piece goods will be divided into equal quarterly amounts of 11,250,000 sq. meters each, with the provision that, if imports in any quarter shall amount to less than or more than 11,250,000 sq. meters, the deficiency may be added to or the excess subtracted from the allowance of any succeeding quarter or quarters, providing that such excess of imports shall never be more than 2,250,000 sq. meters (20% of the normal quota) in any quarter.

Hosiery Conference Jan. 18-19

The annual industry-wide hosiery conference will be held in New York on the tentative dates of Jan. 18-19, 1939, and the Knitting Arts Show will be held in Philadelphia during the week of April 17, the National Association of Hosiery Manufacturers has announced.

Japan to Conserve Wool Supplies

Under a decree by the Japanese Ministry of Commerce and Industry, manufacturers of wool textiles in Japan are required to mix 50% or more staple fiber or other fibrous material, exclusive of cotton, with all wool goods for domestic use.

Cottons Are Quiet but Steady

The strong buying movement in cotton gray goods which began late in June continued through the first week in July, but lost much of its momentum from then on to the end of the month. Prices remained generally steady, and the outlook for fall continues fairly optimistic. Manufacturers believe that elimination of the third shift, Government spending, unfilled orders and general business improvement will tend to offset the adverse effect of what still amounts to a sizeable inventory. Operation during the fall is expected to be fairly continuous.

Textile Securities Advance

A general advance in the prices of southern textile securities has been noted during recent weeks, following the improved position of the cloth markets. It is estimated that asked prices are up from 10 to 25%. However, bid prices have not followed to this same extent. Consequently the volume of sales has not been as great as normally would be expected.

Wool Goods Rise

Wool goods have strengthened during the last month to a point which is reflected in price advances of 2½ to 7½c. per yard. The rise came gradually over the market and buyers were not stampeded by it.

Men's wear lines find fancies fast and staples slow. Women's wear concentrates on bouclés, nubs and rib weaves.

Rayon Prices Up

Following sustained high-pressure buying and persistent rumors of an advance, rayon prices began moving upward at the end of July. American Viscose Corp. precipitated the increase by July 29 by announcing a 2 to 3c. rise, which brought 150-40 up to 51c.

Silk Rises 22c

Continuing its steady gains, raw silk rose from $1.62 (Crack double extra 13/15 white 78%) on June 23 to $1.84 on July 25, the New York Commodity Exchange reported. This 22c. gain was ascribed to increased demand from both hosiery and broad-silk manufacturers.

Wool Tops Are Up

Wool tops advanced through July and on July 22 reached 85½c., the highest level for nearly six months. This reflected the stronger position of raw wool which also in nearly all grades scored advances during the month.

July Rayon Yarn Sales Set Record

Rayon yarn deliveries in July reached an all-time high for a single month, sending the index figure up to 843, *Textile Organon* reports. Preceding high was 826 in August, 1936. Production totalled 53,300,000 lb in second quarter this year against 57,500,000 in first quarter.

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Stronger Knit Goods

"Better than seasonal demand" was reported quite generally through the hosiery, underwear and outerwear branches of the knit goods industry last month. While a few isolated cases of weak prices were noted, market tone as a whole was firm, with jobbers and retailers showing an interest well in excess of normal.

Fabric Demand Up

Both silk and rayon mills were busy the latter part of July, and factors generally looked for an active August. In the silks, velvets were outstanding, and spun rayons were the best-seller in the synthetics. Prices were steady.

Wool Stocks Less

Stocks of apparel wools in hands of dealers and manufacturers on June 25, 1938, totaled 139,423,000 lb., scoured basis compared with 142,554,000 lb. a year previous, a decline of about 2%. Similarly carpet wool stocks were 32,025,000 lb. and 35,649,000 lb. respectively.

Renews TWOC Pact

The yearly agreement between American Viscose Corp. and the Textile Workers Organizing Committee, affecting the 20,000 employees of this foremost rayon yarn company was renewed with minor changes, last month. Revisions were said to include improvement in abitration machinery and in establishment of seniority rights.

European Technicians Here

A group of about 100 members of the International Association of Chemists-Colorists and other textile specialists from France, Switzerland, Germany, Italy, Czechoslovakia, Poland, Rumania, Hungary, Jugoslavia, Portugal and Holland, arrived in this country, Aug. 5, for a series of visits to textile plants.

On the Up and Up

Textile industry jumps from doldrums to delight, as is its wont

By DOUGLAS G. WOOLF,
Editor, TEXTILE WORLD

IN May, we "stuck our neck out again"—as we elegantly expressed it—and predicted "a definitely active movement setting in late in the summer or early in the fall." The following month (June) we stuck to our guns on this prediction—and pointed out that business was then "going through one of those to-be-expected sideways movements which comes after the bottom has been reached and before the real upswing starts." Then in July, we were rash enough to express the belief that the recession was receding.

By this time, one can talk about these things in the high voice, and without his fingers crossed. Business in general and textiles in particular have registered marked improvement—primarily of a psychological nature, but secondarily as reflected in indices.

The big question is: How substantial is the current trend?

What Started It All?

To attempt to answer that, it is necessary to examine the causes of the trend. The immediate one, of course, was the stock market bulge. However that, itself, is more a symptom than a cause. So, what was responsible for the Wall Street recovery?

Most observers put the Government's spending program high on the list of recovery factors. Obviously, if this artificial spending spree were the sole, or even the most important, cause of the present improvement, prediction would be most precarious. Fortunately there are other factors. There is the adjournment of Congress, for example; the speculative tendency to anticipate the effects of the wage-hour law, and many others.

However, in our opinion, none of these compares in importance with this basic fact: Pessimism had so far over-run its mark during the last nine months that a recovery was inevitable. As that recovery set in, it was discovered that inventories had been reduced and that a buying move, particularly in consumer goods, was in order. Here is what *Business Week* has to say about that:

"The stock market bludgeoned home the possibility of better business, but long before stocks began booming in June, the Federal Reserve index of consumer goods production was suggesting in a wee voice that 'recovery was just around the corner' . . . . . Economically, there is an explanation for the forecasting validity of consumer goods production. When inventories drop to the point where shelves are bare, department stores and other merchandisers begin ordering goods from manufacturers to meet immediate consumer demands. That, of course, stabilizes the nondurable goods index. And, historically, the stabilization has been generally followed—some months later—by an upturn in the heavy industries."

That whole basis, we believe, is a natural one and a sound one—and consequently we would expect a continuation of the current upward trend.

For how long?

We knew someone would ask that question. What we believe to be as sound an answer as can be advanced was given to us by an economist whom we have quoted in these columns before, who has never let us down, and who modestly prefers to be anonymous:

It should not be in the least surprising if, at some point along the way, there were to be a period of disappointment because the business picture has not given immediate proof of fast improvement. Nevertheless, if such a disappointment stage is reached, the experience should not be construed as an indication that the broader outlook for improvement over a six to 12 months period is in error.

On the other hand, if it is necessary to caution against wrong interpretation of short-term disappointment, it is equally necessary to caution against projecting the long-term improvement too far into the future. The economist whom we are quoting is not willing to assume that the country is now starting a recovery wave which will blossom out into a sustained three or four years of smooth prosperity. Beyond the spring of 1939, he holds, fears contend with hopes. All that it is safe to picture is a bulge in business of six to 12 months duration. What happens after that, this particular observer does not presume to know.

If general business feels better, the textile industry feels more so. It has undergone one of those sudden and dramatic changes in sentiment which make this industry such an exciting place in which to work. Within a few weeks it can progress from the last throes of despair to the heights of optimism. Right now, it is approaching the latter.

The actual developments have warranted a marked change in attitude. A boom in the sale of staple cotton fabrics; advances in prices of raw wool and wool goods, accompanied by stepping-up of mill schedules; sharp increase in rayon demand and price; continued advance in raw silk prices; a firming tendency in all knit goods; expanding activity in finishing plants—these are all tangible evidence of definite improvement.

The outlook in the South, reports our southern editor, is that the present upswing in cotton textiles will continue with possible interruptions into the fall. No one interviewed in that section seems to fear either a runaway market or a drastic slump within the next several months. The prevailing attitude is one of conservative optimism.

The third-shift elimination in print cloths is hailed as a great aid to stability. There is a movement on foot to get sheeting mills into a similar arrangement. . . . Southern wage levels seem about stabilized after general reduction averaging not over 12½%.

General business in New England is shot through and through with better feeling, reports our editor in that section. In textiles, widespread improvement continues in wool manufacturing. In cotton manufacture, the upturn is less marked. One probable reason for the difference is the fact that wool activity went down so very low that the rate of rebound was almost sure to be a sharp one.

Finally, it must be emphasized that the recent textile improvement has been contra-seasonal. It seems safe to anticipate an increased trend in that direction as we go into the fall. For the time being, at least, the industry seems to be on the up and up.

LETTERS TO THE EDITOR

"A Word About Men"

NEW YORK, N. Y.

Editor, TEXTILE WORLD:

Again you draw congratulations on the good editorial "A Word About Men."

As Portland Huffa of the Fred Allen hour would say, "I'll say, GIVE A LOT OF THOUGHT to the men."

I think, without exception, the successful mills are those that give their men the greatest opportunity to develop, while at the same time not being too stingy in allowing participations in their prosperity as they grow.

SNELSON CHESNEY,
John P. Maguire & Co., Inc.

PORT WASHINGTON, N. Y.

Editor, TEXTILE WORLD:

Your editorial in the July issue, entitled "A Word About Men" is right to the point and you deserve all the congratulations in the world.

HARRY G. GUNTHER

BROOKLINE, MASS.

Editor, TEXTILE WORLD:

Just a line to express my appreciation of your editorial, "A Word About Men." I think that it is very timely.

ROBERT BURGESS

PHILADELPHIA, PA.

Editor, TEXTILE WORLD:

I have read with interest your timely article in the July issue of the Textile World, entitled "A Word about Men" and have at the same time pondered over a quotation from Elbert Hubbard's Message to Garcia: "The man of initiative is wanted in every office, or factory; anything such a man asked shall be granted him." It seems too often, as you have noted, the reverse of this quotation, inasmuch as many organizations, fearful of ambitious men and their ultimate aims, go to great lengths to restrict the actions of the very men to whom surely they should give freer rein.

For the good of industry, men must be made to feel important; the result is devastating where men are made to feel as if they are simply cogs in a machine.

With the steady improvement of machines in the textile world and elsewhere, men are being lured to more profitable occupations and they seek, first, positions which allow them use of their higher capacities.

Most heads in industry must realize the need of ambitious men. They seek to ascend in the avenue of business; then why not encourage the men beneath them to ascend?

Another important consideration too, is letting men know the progress of the firms for which they work; men kept in the dark form their own opinions anyway, and many do not favor the close-mouthed employer.

The machine age has still not supplanted brains and intelligence, and men possessing these qualities should be held as worth their weight in gold.

G. MCARDLE

Editor, TEXTILE WORLD:

I have just read with great interest your editorial in this month's issue of TEXTILE WORLD entitled "A Word About Men."

Some employers are not in the least interested in an applicant's ability and general manufacturing qualifications unless that person has the backing of a sufficiently influential sponsor.

On the other hand I have had the pleasure and satisfaction of coming in contact with employers who are progressive enough to realize the benefits of a thoroughly trained staff of key men. Where this high standard of efficiency exists the accrued business returns are invariably of a very satisfactory and profitable nature.

From general observations based on actual personal contacts I feel it would be quite safe to classify those organizations paying the highest rates of remuneration as the most successful commercially and financially.

TECHNICIAN

No, We Haven't

SAYRE, PA.

Editor, TEXTILE WORLD:

The writer, having just read the May editorial, is writing for information as to why the "defeat of the reorganization bill was the first break" for an upward swing in business.

I am inclined to agree with Ralph W. Page (writing in the very conservative Philadelphia *Evening Bulletin*) that "the campaign about dictatorship had been overdone and grossly exaggerated and that the bill was in fact probably quite proper and commonplace."

It is our sincere hope that you have not joined the Gannet chain of papers.

E. S. DUNLAP

From an ex-Editor

MANCHESTER, ENGLAND

Editor, TEXTILE WORLD:

I have received copy of the June issue of TEXTILE WORLD and read the story on our visit to your country with considerable interest. I may say that I always receive each month a copy of the TEXTILE WORLD and go through it most religiously, not only the articles which I find of considerable interest but also the advertisements page by page. In fact, although I am not connected with technical journalism at the present time to any marked degree, I still take a very considerable interest in every journal that comes on to my desk.

FRANK NASMITH
United Kingdom Executive Manager,
Universal Winding Co.

Contented Reader Department

BURLINGTON, N. C.

Editor, TEXTILE WORLD:

While I don't dish out "apple sauce and prune juice" to just anybody, especially when it is not asked for, I do believe in giving just praise for good work or good service. So, I will say this about your magazine:

I like the way it is edited, the text is placed together; that is, an article is not started on one page and then continued on some remote page in the back of the magazine, as quite a few publishers do. An article started and completed on the same page or the following pages, is a convenience appreciated by most readers, I am sure.

I find browsing through the TEXTILE WORLD from cover to cover, revives my interest in my work and often gives me a helpful thought.

The advertisements in your journal are interesting and quite frequently helpful to the wide-awake mill man. For instance; I have long felt the need for a noiseless check valve for boilers in the smaller hosiery mills. Looking through the current issue of your paper, I ran across the advertisement showing both the picture and cut-away of a new cushioned check valve. That looks just like what "the doctor ordered."

I hope you will continue to push forward and never drift on your reputation.

JULIAN W. HUGHES

Wage-Hour Administrator . . .

Elmer Andrews' appointment meets with approval from most groups

(*From* TEXTILE WORLD'S *Washington Office*)

THE appointment of Elmer F. Andrews, industrial commissioner for the State of New York, as administrator of the new Federal wage-hour law transforms into an actuality a piece of legislation which to date has been regarded as something intangible.

Naturally, much interest focuses on labor's attitude toward the appointment. The CIO seems to have taken the word of Sidney Hillman that Mr. Andrews is acceptable. The new law also is as satisfactory to the Lewis group as could be expected. In fact CIO people are saying proudly they did more than AFL to get the bill passed. CIO is far from pleased with the 25 c. minimum which it considers too low, and it would like to have seen fewer exemptions for seasonal processors, harvesters and others. The single administrator is a disappointment to the committee, which had hoped for a board similar to NLRB. Officials say the one-man authority can direct the work about as well as a group, but they don't believe one man can think as thoroughly as several or that he can represent diverse interests as well.

The AFL has had satisfactory experience with Mr. Andrews in New York and is pleased with the appointment. But AFL is not satisfied with the wage-hour law and will try to amend it next Congress. One objection is that the law is complicated and difficult to administer. An attempt will be made to simplify it. Federation lawyers are writing a simplified analysis of the present law for distribution by AFL State offices. This thinking will help them formulate their amendments. AFL did not and does not approve of regional differentials and will try to have them eliminated. A strong AFL anti-differential bloc in Congress could fight over much of the old battleground. Another provision AFL doesn't like and will try to remove is that part of Sec. 7 which gives the Labor Relations Board some authority on exemptions from hours standards.

Washington "observers," so much quoted for lack of better sources differ on what Mr. Andrews will do between Oct. 24 and January. Some say he will stall along, avoiding the anger of some group that might get one or more Senators to block his confirmation. Others say that no sane man, especially Andrews, would resort to pussyfooting to keep one of the country's meanest jobs at low pay.

International

Elmer F. Andrews, Administrator of Wage-Hour Law

There is probably no group in Congress thinking very much about labor standards. On that Hill of wisdom, as elsewhere, those who assured the world in loudest voice that the law would succor the underprivileged, really meant they thought it should be tried. They will be content to watch the trial if not forced to act.

Only a few southern Representatives here do not approve of Mr. Andrews' appointment. They had hoped for a man who would assure status quo for their natural advantages and they fear that the administrator will be inclined to think New Englandish.

★ ★ ★

Textile Industry Probably First

Elmer F. Andrews, newly appointed administrator of the Federal wage-hour law, is a civil engineer, who applied for two jobs when he got out of college: one as engineering assistant for a railroad, the other as engineering writer for a McGraw-Hill magazine. Each offered him a job; the railroad's bid arrived first and he took it. After working for several railroads, then as consulting engineer on several big civic projects in New York, he was drafted in 1929 by Frances Perkins, then industrial commissioner in New York State, as her assistant, and succeeded her as commissioner when she became Secretary of Labor in 1933. He has held that office since that time.

There is wide approval in business management, labor, and Government circles. This general opinion is summed up by Isador Lubin, head of the Bureau of Labor Statistics in the Department of Labor, who will work closely with Mr. Andrews in the new set-up: "He is a shrewd and able administrator, with a splendid record of operating efficiency in a State where unemployment insurance, women's compensation, and other administrative laws present a prodigious task. He has a knack for keeping both sides satisfied in settling disputes."

The following is expected to be the general order of procedure: (1) Prior to the effective date of the law, Oct. 24, a great deal of information will be distributed throughout the country, dealing with questions of method and general practices in connection with the law. (2) Selection of industrial and sectional committees will be made carefully, with existing State and industrial machinery utilized as fully as possible. (3) It is believed that the textile industry will be the first "big field" to gain attention, but the whole endeavor will be to keep everybody abreast of developments and not to let one area lag or get out of touch.

Criticism has been made that Mr. Andrews is very much of a bureaucrat. Those who know him admit this charge but state that he is the best type of bureaucrat and one who may be expected to give a most efficient and fair administration of the law. The team of Andrews and Lubin is expected to be an excellent one.

A man who investigated Andrews' background pretty carefully sums up with the statement that the Administration could not have done better in its selection. Obviously, this observer did not mean that there is not a better man in the country for the job—but that no better man who would be willing to take it, and who would be acceptable to all groups, could be secured.

A group of piece goods buyers, retailers and silk manufacturers seen at the cocktail session of the Fashion and Silk Merchandise Forum. First row, left to right: A. L. Schmallback of P. Wiest Sons, York, Pa.; J. W. Littell of Onondaga Silk Co.; Miss Esther Raup, Wm. Skinner & Son; P. Nally, Stern Bros.; J. F. Coleman, Stunzi Sons Silk Co.; Wm. J. Birmingham of Wm. J. Birmingham & Co.; J. F. Higgins, Jas. McCutcheon & Co.; Fred Peterson, Chas. F. Welek & Co., St. Louis, Mo.

Second row left to right: W. J. Coonin of Klein Bros.; L. M. Bockstover, Stunzi Sons Silk Co.; R. E. Hulbert, of Catoir Silk Co.; Larry Cremins of Wahnetah Silk Co.; Robert Hurliman, Descours Genthon, Inc.; J. F. Farrell, Catoir Silk Co.; and W. M. Neill, Stunzi Sons Silk Co.

Mill-Retailer Cooperation

Stressed by speakers at Silk Guild Forum

MANUFACTURER - RETAILER relations in piece goods merchandising was a major topic of discussion July 21, when the International Silk Guild played host to some 400 retailers from all parts of the country, at the Waldorf-Astoria Hotel, New York. The occasion was the second annual Silk Forum of the Guild. R. D. Jenkins, vice-president of the Guild, introduced Jay D. Runkle, as discussion leader, and, guided by Mr. Runkle, numerous piece goods executives of leading stores spoke "off the record" on quality fabric merchandising.

The buyers offered various salient points for manufacturers, as follows: The average mill sells 85% to cutters and 15% to stores, and therefore the retailer gets very little consideration from the mill. Manufacturers should avoid dumping fabrics in direct competition with goods which their own customers had bought previously at list prices. Both mills and stores should be more cautious in building up stocks of a "fad" line.

The Guild's plans for the Forum were elaborate. In addition to morning and afternoon public sessions and a fashion show exclusively for the retailers, those present also were the Guild's guests at luncheon; the crowded day ended with a dinner at which the chief speakers were Miss Jessica Daves, managing editor of *Vogue*, and Lew Hahn, managing director of the National Retail Dry Goods Association.

Following the method introduced so effectively last year, Mr. Runkle stressed informality in interviewing retailers at the forum sessions, and the result was much frank comment. Silk fabric manufacturers in the audience heard themselves criticized by A. J. Fuqua, of Harris & Co., Dallas, for "dumping goods on the market and hurting the business of their own customers." However, Mr. Fuqua was equally critical of the stores; he said retailers also were at fault, as they failed to support manufacturers' efforts to keep up fabric quality.

"Mills can't live on just a few orders from a few stores," Mr. Fuqua pointed out. "Unless the quality fabric market is *broad* it won't live at all." Closer cooperation between individual mills and stores, more interest by stores in quality fabrics and better timing by mills of their seasonal clearances are chief needs of the trade, he stated. Color is more important today in fabrics than either stores or silk manufacturers realize, according to Frank Levi, of R. H. Macy & Co., New York. Ben R. Gibbons, J. W. Robinson & Co., Los Angeles, criticized mills' selling methods as "hackneyed." Answering a question by Mr. Runkle, this speaker remarked that quality of fabrics sold by wholesalers has deteriorated "very, very much." Other speakers included H. H. Bennington, of L. Bamberger & Co.

Particular interest marked the statements made by pattern company representatives in the afternoon. One speaker asserted that a survey showed that the reasons women buy fabric and make their own apparel fall in the following divisions: 50% for style of fabric and originality of dress; 12% for more satisfactory fit; 12½% because they love to sew; and 25% for economy. Another pattern company representative said that studies among school groups indicated that textile manufacturers were educating the consumer on textiles to the point where soon the consumer would know more than the retail clerk about fabrics.

The fashion show in the afternoon, which was a highlight event, included 800 fabrics contributed by 85 silk manufacturers. The show was in charge of Miss Ethel Herrell, associate director of the Guild, as fashion commentator. A feature of the dinner in the evening was a tribute paid by R. C. Kramer, chairman of the board of Belding Heminway Co. to Paolino Gerli, president of the Guild, for his pioneer work in winning international support for the Guild at its inception.

5TH SILK PARADE STARTS SEPT. 19

The success which marked the Silk Forum served as an excellent build-up for the fifth annual Silk Parade, to be held nationally during the week beginning Sept. 19. More than 7,500 stores will take part in this event; on the average 20 departments in each store will carry about 60 items of silk merchandise. Preliminary reports reaching the International Silk Guild indicate that the event will include a wider range of merchandise than any of its predecesors.

TEXTILE PERSONALITIES

Fuller E. Callaway, Jr.

FULLER E. CALLAWAY, JR., president and treasurer of Callaway Mills, LaGrange, Ga., is one of the youngest chief executives of a major mill group in the industry. Yet his background and training make him particularly suited to the great responsibility he carries. To begin with, he is the son of the founder of these mills, and bears his name. Those who know him feel that he has inherited not only his father's name but also a great many of his characteristics—determination, business ability, self-confidence, poise, and, above all else, a sense of the importance of human values.

Mr. Callaway's business career began in 1927 after he had completed his schooling at LaGrange High School, Georgia Institute of Technology, and Eastman Business College. His first job was in January, 1927, with Richard, Jackson, Davis Co., certified accountants, Atlanta, Ga. Later that year, he was made treasurer of Valley Waste Mills, LaGrange, and about a year later became treasurer and general manager of Truline, Inc., Roanoke, Ala. In August, 1932, Callaway Mills was incorporated, and he was made treasurer of the new firm, a consolidation of six mills. In October, 1935, he became president and treasurer. Mr. Callaway's hobbies away from the mill are amateur photography, agriculture, and horseback riding.

However, at the mill, his hobby is becoming personally acquainted with as many individual employees as possible.

IF the textile business gets too arduous—try growing asparagus. E. Irving Hanson did not make that recommendation; but he might have—for it's part of the story of his career. As a sideline to his executive activities at Stunzi Sons Silk Co., New York, Mr. Hanson operates a 600-acre commercial farm in Maryland. And what's more, he makes the farm pay!

Irving Hanson's textile career spans the history of fine fabrics in the United States for the first third of this century. Starting with Valentine & Bentley, in 1901, he became increasingly interested in the quality textile field. Then followed a period of intensive study of silk manufacture and sale.

In the year 1913, he went to M. C. Migel & Co., which firm changed its name in 1915 to H. R. Mallinson & Co. Mr. Hanson was admitted to partnership in 1916 and was elected president in 1932, on the death of Mr. Mallinson. He is reputed to combine good production sense with styling and merchandising ability, which practical combination he now brings to the house of Stunzi.

Personally, Mr. Hanson has two interests—his job and the outdoors. He likes travel too; and he believes in seeing America first. Horse-back riding is his favorite sport—that and the farm!

E. Irving Hanson

BACK in the 1920's J. Spencer Love found big industry asleep to the opportunity of weaving rayon yarn into fabric, and by doing it himself created $14,000,000 Burlington Mills Corp. His father was a Harvard mathematician, but J. Spencer found nothing to do in Cambridge, went down to North Carolina, and stumbled into the cotton-textile business. From there he switched over into weaving rayon. Problems were to keep weaving methods and machinery abreast of the rapidly developing rayon industry, and to capitalize on the growing demand for rayon as a substitute for silk and cotton. J. Spencer Love managed to do both of those things. Since his success with Burlington Mills has been through the stiffest kind of competition, he does not in general take kindly to production-control ideas. He takes his Adam Smith seriously.—"*Fortune*"

Courtesy "Fortune"

J. Spencer Love

Textile Salesrooms

Beauty and Usefulness Display Quarters of

Textile salesrooms in New York are going modern. On the principle that attractive surroundings play an important part in the sale of goods, many leading companies have reconstructed and redecorated their offices and display quarters. Practicality and beauty are effectively

Modernistically designed auditorium is a feature of the new display and sales rooms of Munsingwear Inc., on Madison Avenue. Photograph shows auditorium stage which is used for fashion shows; mannikin serves as permanent background for living models

Indirect lighting accentuates the artistic appearance of the reception room at the new Munsingwear offices

Glass panelling gives a luminous and pleasing aspect, as shown in redecorated Broadway salesrooms of J. P. Stevens & Co. Glass construction by Libbey-Owens Ford Glass Co.

Go Modern

Characterize New Leading Firms

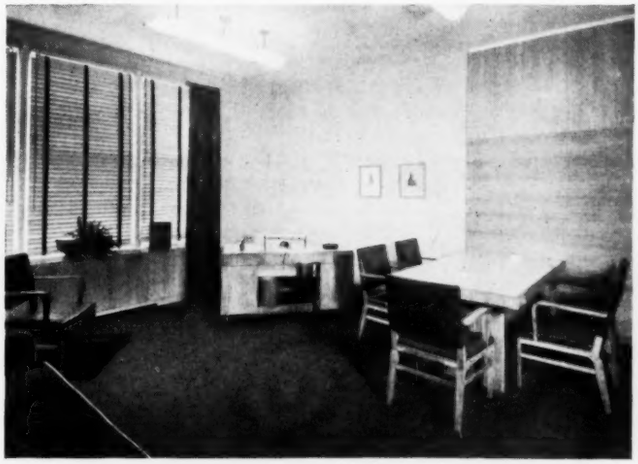
combined in most instances—the keynote being, as one decorator put it, "to make the salesroom a pleasing frame for the merchandise, and to provide comfort for the customer."

On the accompanying pages are shown textile salesrooms representative of the new trend.

(Above) Accessibility of fabrics, effective display methods, and luxurious furnishings combine to lend dignity to Park Avenue offices of Callaway Mills; window drapes are made from Callaway fabrics. Decorations planned and executed by Flint & Horner Co.

Circular motif is a distinctive method of treatment for a reception room, especially when applied to both floor and ceiling. Illustration shows entrance to new Goodall Worsted Co. offices on Fifth Avenue

(Below) The expediency of the photo-electric door is making this method of door operation popular in both mills and offices of textile firms. Photo shows door opening into the redecorated offices of McCampbell & Co., on Worth Street. "Magic Door" installed by Stanley Works



Modernistic influence is tempered down to a dignified simplicity in the private office of Elmer Ward, president, which is one of the interesting rooms at the Goodall offices

Fig. 1. Method of testing for permanent kink or wiriness

Rayon Sizing Tests

Show effect of formulas and operating conditions on viscose and acetate yarns

By W. L. BENTLEY *

THERE is still a great deal of controversy as to the physical changes which take place in rayon yarns as a result of the warp sizing operation. In an effort to discover what actually happens to rayon yarns incidental to the application of sizing materials, over 9,000 single-end tests were conducted during the last three years on all types of rayon yarn produced in this country. Various types of sizing compounds were used in these experiments. The endeavor throughout was to obtain practical results which would lead to better sizing, weaving, and finished fabrics. Observations were made with reference to wiriness of the yarn, suitability of the size, resistance to chafing, tensile strength, effect of humidity, use of a plasticizer, problems due to rayon oils, effects of solvents, permanent stretch of the yarn, elasticity, fatigue of rayon, effect of temperature on the size, and caramelization of the size. This article discusses only the observations concerning the first eight of these factors. The remainder will be discussed in an early issue.

A sized warp end should contain enough size to cause it to run well in the loom, but not so much as to result in its becoming too wiry. Even though a wiry end may run well in the loom, it will damage the fabric by imparting a minute nip to the unsized filling at the fell of the cloth. This damage has not yet been generally recognized by the trade as an imperfection; and, possibly for this reason, no machine has been developed for measuring the degree of wiriness of an end. Hence, improvised finger tests (Fig. 1) have been used for this purpose. If an end, upon being drawn between the thumb and fore-finger of the left hand was permanently kinked, it was considered to be too wiry. Four lots of 100-denier dull acetate yarn, each lot being sized with six different size solutions at both 4% and 6% concentrations were tested by this method. Results of this method of test are listed in Table IA. It will be noted that all size solutions were satisfactory, except No. 17, which proved to be unsatisfactory in every instance.

Suitability of Size

Suitability of the size refers to the ability of the size to fuse the fibers without imparting a wiriness to the yarn. This was determined by breaking the yarn and noticing the appearance of the ends. Breaking of kinky yarn produced sharp ends, whereas the breaking of under-sized yarns, or yarns sized with incorrect solutions, produced fuzzy or decidedly flaring ends. Correctly sized yarn broke with all the filament ends even and slightly separated; these are designated as clean. These four standard breaks are illustrated in Fig. 2. Results of a test on the same four lots of yarn employing this method are listed in Table IB. Here again, it will be seen that size solution No. 17 produced unsatisfactory results, while the other solutions produced good results.

Passage of the warp over the lease rods and through the drop wires, heddles and reed; lift of the harness; traverse of the shuttle; density of pick and sley all contribute to an abrasive action which tends to chafe the ends. Perhaps the most important property of a sized warp end is its resistance to this chafing. While abrasion machines for measuring this resistance are available, none of them was suitable for this particular test. Therefore the yarn was tested by holding the end taut and rubbing it briskly

* Textylist, Thomas W. Dunn Co.

TABLE IA. Suitability of various sizes as determined by kink test.

Size Formula	4% Gelatine				6% Gelatine			
	1A	2A	3A	4A	1A	2A	3A	4A
13	*	*	*	*	*	*	*	*
17	‡	‡	‡	‡	‡	‡	‡	‡
25	*	*	*	–	*	*	*	*
27	*	*	*	*	*	*	*	*
28	*	*	*	*	*	*	*	*

* Kinks. ‡ Does not kink. – No test.

TABLE IB. Suitability of various sizes as determined by break test.

Size Formula	4% Gelatine				6% Gelatine			
	1A	2A	3A	4A	1A	2A	3A	4A
13	cl *	cl	cl	cl	cl	cl	cl	cl
17	sh†	sh	sh	sh	sh	sh	sh	sh
25	cl	cl	cl	—	cl	cl	cl	cl
26	cl	cl	cl	cl	cl	cl	cl	cl
27	cl	cl	cl	cl	cl	cl	cl	cl
28	cl	cl	cl	cl	cl	cl	cl	cl

* clean † sharp. – No test.

TABLE IC. Effect of various sizes on tensile strength and elongation of acetate yarn

Size Formula	Tensile strength in grams										Per cent elongation									
	4% Gelatine					6% Gelatine					4% Gelatine					6% Gelatine				
	1A	2A	3A	4A	Av.	1A	2A	3A	4A	Av.	1A	2A	3A	4A	Av.	1A	2A	3A	4A	Av.
13	149	144	144	139	144	151	127	138	141	139	21.50	19.16	17.66	19.16	19.37	18.18	18.18	20.00	19.66	19.00
17	150	...	...	143	146	151	132	132	...	138	18.19	.....	.....	18.66	18.42	16.66	17.66	12.50	.....	15.61
25	147	129	128	...	135	147	127	133	...	136	17.33	19.83	17.33	.....	18.16	18.66	18.83	19.00	.....	18.83
26	149	134	128	138	137	154	132	132	135	138	19.83	21.33	18.00	18.18	19.33	20.64	20.64	20.64	18.66	20.14
27	150	130	129	129	134	158	144	144	141	147	19.16	17.33	19.16	16.66	18.08	21.84	18.83	18.83	22.33	20.46
28	150	133	131	133	137	152	132	128	136	137	18.66	18.18	18.00	18.18	18.22	20.64	18.83	18.19	12.83	17.62
Unsized	131	124	125	122	125						16.66	20.91	23.50	20.66	20.43					

between the thumb and forefinger. If the yarn showed no fuzz after being rubbed, it was considered to have sufficient resistance to chafing. Standard test for viscose yarn was six rubs, and that for acetate was ten rubs. Rubbing tests made in this manner indicated that all of the sizing solutions used in Tests IA and IB gave satisfactory resistance to abrasion on the four lots of acetate yarn.

Tensile strength and elongation were measured on a Suter single-end tester, using 6-in. lengths of yarn. Acetate yarn sized with different size solutions, each at 4% and 6% concentration was tested, and the results were compared with those obtained in the test of unsized yarn. These results are listed in Table IC; each result represents an average of ten tests.

It will be noticed that for sizes Nos. 25, 26, and 28 there is very little change in average tensile strength and average elongation due to increase in gelatine concentration. However, the difference between the high and low tensile strengths is rather appreciable for both size concentrations. With the other sizes there is greater difference between the averages of tensile strength for the two size concentrations; and with sizes Nos. 17 and 27, there is considerable difference in averages of elongation for the two concentrations. Particularly, with size No. 17, the difference between the high and low tensile strengths is not so much as with the other sizes; yet this size, as shown in Tables IA and IB, proved to be unsatisfactory. In comparing results, notice that the average tensile strength for unsized yarn is appreciably less than that of any of the sized yarns, while the average elongation is greater in every instance except one; viz, No. 27.

In connection with the tests for tensile strength, it was noticed that no size solution was able to protect the yarn against changes in humidity. Table II shows results of tests of 100-denier bright viscose yarn unsized and sized with a 6% gelatine-base solution, for both a wet and a dry day. These variations indicate the harmful effects of changes in humidity. Note that the unsized yarn produced better results than the sized yarn, because a heavy concentration of size, proportioned for acetate yarn, was used.

It was discovered that the addition of a plasticizer to a gelatine base size solution materially enhanced the tensile strength of the sized yarn. However, it was deemed impractical to use a plasticizer because those tried cannot be washed from the goods by ordinary methods, and furthermore, they did not aid the yarn in withstanding changes in humidity.

The first requirement of a good sizing solution is that it have sufficient tack to bind the fibers on the surface of the yarn. However, it was noticed that with the same size solution, the tack proved to be sufficient for yarn made by some producers, but insufficient for that made by other producers. Since certain oils and chemicals greatly reduce the tack in glue, gelatine, and starches, it was concluded that the difference in results was due to a difference in the oils used by the various rayon producers.

Fig. 2. Four standard breaks for determining suitability of siz. Top to bottom: Clean, Fuzzy, Sharp, Flare.

TABLE II. Effect of humidity on tensile strength and elongation of viscose yarn

	Tensile Strength		Elongation	
	Unsized	Sized	Unsized	Sized
Dry Day	252	234	131.0%	119.0%
Wet Day	237	223	147.0%	133.0%

TABLE III. Effect of solvents on tensile strength and elongation of acetate yarn

Size Formula	Tensile Strength	Elongation
6	135	5.50%
7	140	8.00%
3	155	11.50%
8	145	7.50%
4	150	7.50%
5	145	7.00%
2	160	10.00%
9	140	8.00%
*	145	17.50%

* Unsized.

Some type of solvent may be added to the size solution to remove the oil from the yarn; but the solvent is likely to prove harmful to the yarn. To determine the effect of various solvents upon the yarn, tests were conducted on 100-denier dull acetate rayon under identical tension and temperature conditions. Results of these tests, obtained with a Scott inclined-plane single-end tester, using 20-in. lengths of yarn, are tabulated in Table III. Study of the results seems to indicate that when powerful solvents are used, there is a momentary period between the time when the oil comes off of the yarn and the time when the size goes on to it. Seemingly, since the yarn was wet and under tension, the fact that it was without protection during this momentary period allowed it to stretch. This point, however, needs further investigation. Notice that in every instance, the elongation of the sized yarn is considerably less than that of the unsized yarn; with size No. 6 it is less than one-third the elongation of the unsized yarn. With some sizes the tensile strength has been increased, with others it has been decreased, and with still others it has remained unchanged.

In an effort to break down the finishing substances in raw rayon, many slashers employ unusually high temperatures in the size box. This practice should be guarded against as it is likely to prove injurious to the yarn. Safe size temperatures are 140 deg. F. for aceate yarn and 120 deg. F. for viscose.

Factoring for Textiles

An avenue for cutting losses and aiding efficiency of executive control

By R. BRUCE WILLIAMS

THIS contributed article is an analysis of the factor's services in the textile field. It presents an effective summary of their application and benefits. On opposite page is an historical sketch of factoring development.

FACTORING services have attained increasing success during each of the recent business recessions because of the manufacturer's increasing knowledge of and confidence in the factor's system of purchasing credited accounts and the factor's guarantee of the solvency of its fostered capital. This service can release the progressive capacity of the manufacturer and open the way to greater profits through unobstructed purchasing power and unfettered executive control.

The background for successful manufacturing is efficiency both in the mill and in the executive's mind. This is attainable through cost-conscious control and unceasing modernization in equipment. The factor plays an important part in maintaining these two elements. His service eliminates bad debts and their contingent losses; it liquidates capital tied up in accounts receivable, and eliminates credit and collection department expenses entirely.

Aids Purchasing Power

In assisting purchasing power, the factor donates a superior reputation and standing to the manufacturer's credit rating from the moment the factoring contract is signed. Supply houses do favors for the customer who pays his bills promptly, and cash purchases at favorable prices are also possible.

For the manufacturer who desires to run his business on a flexible cash basis, and who wishes to avoid the expenses of maintaining his own credit department, the factor supplies a far-reaching service. For cost-conscious control and maximum executive supervision, a mill organization should not be hampered with financial detail in the form of checking credits, maintaining collection staffs, carrying the burden required by unnecessary bank transactions, and assuming the costs of required bookkeeping and accounting services. Add to these items the amounts lost through bad debts and losses suffered through the sale of goods returned by insolvent customers at post-seasonal dates, and the manufacturer may discover that he is losing by not having his factoring done for him. Because of the manufacturer's opportunity to do more business, the possible increase in profits realized by a factored mill may more than absorb the factor's commission.

For Most Efficient Management

Primarily, the general manager of a mill or factory holds the responsibility of conceiving a marketable idea, converting that idea into a marketable product through manufacture and, finally, creating outlets for his product through sales. These three requisites are not a part-time job. They require thorough, unified management, not cluttered with outside interests and attention. Competition today calls for near-perfect merchandise produced at very low cost. The guidance of management is required for this combination, plus modern, well-maintained equipment.

To carry out an effective modernization program, the greatest possible sales stability is desirable to provide the needed financial solvency. Such a manufacturer must have his credit-checking and collecting done as accurately and as economically as possible, incurring no losses through financial risks, yet leaving himself the required time and energy to supervise the changeover from old to new machinery.

Often the manufacturer of high quality, expensive merchandise, produced in small lots, with many style changes, finds himself in a delicate position in regard to the amount of capital tied up in stocks of raw material, finished product and work in process. Labor expenses in intricate fabrics are necessarily high, calling for large payrolls applied against comparatively low production and slow deliveries. The work is highly specialized, and the product usually "custom-built" for a specific trade, which leaves no open market possibilities in case of defaulting customers. Labor, overhead and supply costs accumulate in excessive amounts in the work in process and in whatever stock may be on hand. Factoring services in cashing invoices and advancing funds on materials in process which are on order, relieve the congested financial positions which are so easily developed.

These same services are a valuable aid to the manufacturer who enters a new field on a large scale. Preliminary work of investigating trends of the new product can receive help from the factor. The same applies to plans for contacting the trade and lining-up desirable customers. The factor also can give information on quality requirements and style choices.

When the operation of a new line is finally undertaken, the factor's basic functions rise to new prominence, for it is at this time that confidence in the sales campaign becomes the manufacturer's outstanding concern. With the factor's support, he need have little fear of the leaks and losses of a sales and credit promotion so often incurred. The factor may be considered a specialized merchandiser in confidence.

Factored or Unfactored

The benefits obtainable from the factor are not expensive. Factoring commissions range downward from slightly over 3% on net sales for what is known as "full house account service," to less than 1%. The rate is related to sales volume, to length of terms extended to customers, and to the class of credit risks assumed by the factor. Auxiliary services are charged at either fixed rates or small additions to the commission. Interest at 6% is charged for money advanced, or credited for balance left with the house.

The manufacturer who is interested in determining whether he should operate factored or unfactored, should consider that the variable and sometimes indeterminable costs of bad debts and credit and collection expenses might be advantageously supplanted by the factor's flat percentage rate, which is easily included in a cost calculation as a definite fixed expense probably as low or lower than the manufacturer's own costs of these items.

Factor's Long History

Movement toward liquidity over centuries gives him highly specialized form

THE factor of today may be considered a modern descendant of the "factor" of the 16th century who carried the long arm of commerce into remote trading posts in newfound lands. There were "factors" too in the days of the Roman Caesars who ran the estates and plantations of their employers and made accounting of items received and disbursed.

Between these eras are gaps through which history does not consecutively trace the evolution. That tracing is not needed for one to reach the conclusion that the three types of factors are of the same stock, since their common objective from earliest days has been, and still is, financing the exchange of goods.

The name "factor" was in general use when agents of the East India Company and the Hudson Bay Company in remote tropics or in far North, traded on behalf of their company "fire water," cutlery and calico with primitive natives for furs, minerals, etc. The word, from its Latin root, means obviously one who does or makes, and usage has added to the word the supplement that the deed be done on behalf of another.

When the early American merchants to whom our present-day factors trace immediate descent, first set themselves up, the word "factor" was not applied to them; rather they were commission merchants. In simple terms their business consisted of receiving consignments of goods from abroad which were customarily auctioned soon after the arrival; and of reinvesting the proceeds in products needed abroad which were returned to the original consignor on the ship's homeward voyage. Later the element of delayed payment for the consigned goods arose, and, as the overseas owner of the goods had no way of judging the solvency of his customers, the commission merchant took upon himself the responsibility of guaranteeing the credit of those to whom he sold—a prime function of the factor of today.

Men who have grown up in factoring houses are proud of their lineage as merchants, and they recognize as a distinction and asset to their kind of business the fact that they are merchandise-minded. The matter of simple financing is the field of the finance house or banker, and the factor himself is a good customer of such organizations. The modern factor's contribution to his client, however, is not money-lending; rather he *buys* his client's receivables without recourse. Only upon return of goods for cause by the customer is the client called upon to resume his financial responsibility for the transaction.

The factor of the 18th and 19th centuries was a kind of agent and he frequently appears in the legal records of the time as having a general lien on his principal's goods for any balance due him on the general account. The leaning of the law was to protect factors' advances against any other creditors, on the grounds that such protection was for the convenience of trade and the encouragement of what a jurist in 1793 called "quick circulation."

And Now in Modern Times

However, in the early years of the 20th century, when the specialized form of modern factor began to emerge, and he delegated the selling function to a "department" or an "annex," the legal decisions were not so encouraging. As a result, beginning in 1911, the New York legislature passed a series of acts which became part of the Personal Property Law, which clarified the factor's relationship to his client's goods.

Writers on the subject have recognized the factor's distinction from the banker and the finance or discount company, due chiefly to his first hand knowledge of styling, of budgeting production, and of credit conditions. Owing to his closer contact with the business, larger sums may be advanced by the factor to his client than a bank would be willing to advance on similar security. The banker takes an indorsement, the finance company a contract, but the factor "buys" the account and relieves the seller of financial risk.

"If a large strata of business would not conform to the banker way of life," write R. T. Steffin and F. S. Danziger in the *Columbia Law Review*," the obvious thing to do was to shape financial machinery to fit the business view. The amazing thing is not that the factor is now doing this, but that the development has been so long delayed and painful . . . The factor's business is but an eddy in the broad movement, at least two centuries old, looking toward an ever increasing liquidity. . . That he builds in a long tradition is evident enough."

His earlier history almost wholly circumscribed by the textile industry, the factor has in recent years branched out to other fields. His credit information is his backbone, and where trades sell to retailers, chain stores, wholesalers, etc., the factor is able to offer his services. Trades that have entered the fold include shoes, rubber goods, electrical appliances, glass, leather, paper, furs, millinery, work clothing, lumber, cloaks and suits, fuel oils, etc. Some of these trades require special credit files, and certain of the older firms have set up or acquired factoring subsidiaries which specialize on the trade concerned and whose business may be re-factored by the parent house. The factor brings to the independent manufacturer a conservative method by which he can reinforce working capital without creation of debt, division of control, or expansion in capital structure.

It was estimated early in 1937 that 5,500 American concerns were using annually $1,000,000,000 of factoring money, and, although the recession of 1937-1938 cut the volume somewhat, it made the usefulness of the service the more evident. A manufacturing business today involves three functions: production, distribution and finance or credit. The heads of these functions must be specialists to bring success to the enterprise as a whole, and it is as specialists on finance and credit that the factor has developed to his present position.

Further recent developments indicate expansion of factors into foreign trade. Already one long-established New York house has set up a London correspondent office. This linkage permits the checking of American credits for foreign shippers who would sell to this country, as well as checking foreign credits for American shippers and the financing of both sorts of transactions by the usual method of purchasing invoices without recourse to the seller. The foreign trade development revives the traditional function of the factor in facilitating commerce over distances and boundaries which individual manufacturers would find it difficult or impossible to bridge.

In Acid Carbonizing

Concentration and temperature of baths, operating speeds, require careful attention

By JOHN HINTERMAIER

PRELIMINARY operations, such as opening and scouring, remove only a small fraction of the vegetable matter present in loose wool, which may in some cases amount to over 5%. Therefore, carbonizing becomes necessary. For loose wool, carbonizing is best done immediately after scouring. The wool is soaked for approximately 1 hr. in a 4 to 6% sulphuric acid solution, depending on the amount of vegetable matter present. It should then be dried thoroughly, at temperatures below 75 to 80° C., before being raised to the baking temperature of 90 to 105° C.

Adaptation to Fabric Weight

In piece-goods carbonization, if the weight and weave of the pieces being carbonized are similar from piece to piece, little difficulty in temperature or speed control is likely. When a 5-oz. dress fabric follows a 20-oz. velour coating, great flexibility in control is needed. The heavier material contains more water and must be run at slow speed to dry it correctly. If the light piece is run at the same speed, the head end may become dry too soon and begin to carbonize before reaching the baking chamber. The practical solution in such cases is to cut the acid in the impregnating bath with water to 1½ or 2% as soon as the light piece enters the tank. It may also be necessary to open the machine doors as the light pieces reach the middle of each oven. Reducing the concentration of the sulphuric acid slows up carbonizing and at the same time is a protection to the wool fibers.

When heavy pieces follow light materials, the bath should be brought up to about 4%. Speed should be reduced, but the temperature should not be raised until the last end of the light pieces is about half-way to the baking chamber.

Acid addition gives an opportunity to employ ingenuity if the tanks are not equipped to distribute the incoming acid evenly and rapidly throughout the entire tank. Severe shading on one selvage only was traced to a 25° Bé. sulphuric acid inlet pipe which was located in the middle of one side of a tank. The strong acid poured right along the selvage. Relocating the pipe at the entering end of the tank and submerging it to the floor completely eliminated this trouble. It was also found that a perforated air pipe near the floor of the tank helped to agitate the bath and distribute the incoming acid. Later experiments showed better results could be obtained by using a stock acid of only 6° to 8° Bé. (6.3 to 8.5%).

Mill trials carried out under carefully controlled conditions showed that successful carbonizing can be done with sulphuric acid as low as 1.5% in concentration for lightweight goods, while 3.5% to 4% was sufficient for the heaviest coatings, meltons, etc.

The most practical method of determining the concentration of carbonizing baths is to set up a small titration bench near the machine. Apparatus should include an automatic burette and reservoir, a supply of distilled water, beakers, 10 c.c. graduates, and methyl orange indicator solution. The sodium hydroxide reagent is prepared by dissolving about 105 grams of stick or flake sodium hydroxide in a liter of distilled water. This is subsequently standardized against solutions of sulphuric acid of known concentration, so that 1 c.c. of reagent exactly neutralizes 10 c.c. of acid of 1% strength. A carbonizing bath of 3% concentration would require 3 c.c.

Neutralization

For loose wool neutralizing, depending on the production of the machine, enough soda must be added to keep the concentration of the first soda bowl not less than 5 grams per liter, and preferably around 7 g.p.l.; the second soda bowl should be kept at about 3 g.p.l.

Here, too, a small titration bench with an automatic burette containing special hydrochloric acid reagent is necessary for proper control. The reagent is roughly prepared by diluting 19 c.c. of concentrated hydrochloric acid to 1 liter; it is standardized by titrating 10 c.c. of a prepared soda solution containing a known weight of soda ash and adjusting the reagent concentration until 1 c.c. of reagent is equal to 1 g.p.l. of soda ash.

The pH of properly neutralized wool may be anywhere from pH 6 to pH 8.5. Higher than 8.5 may be somewhat injurious in the drying oven and lead to incipient alkali damage. Lower than pH 6 shows that the material still contains some acid.

In piece neutralizing, the question of time is the deciding factor. It has been found that rinsing with water leaves only about 3% of acid on the cloth. This is accomplished in 25 to 30 min. when processing 250 yd. of cloth containing 5 to 6½% of acid at a speed of about 150 yd. per min.

A soda bath of 15 to 25 g.p.l. is used for neutralizing. This is prepared by adding a measured amount of stock soda solution (5%)—25 to 30 liters per 60 yd. of material. The rinse water is drained off before the soda is added. Enough water is then added with the soda to permit a short bath in the machine. Final rinsing of the soda in high-speed machines requires from 25 to 30 min. with continuous flow of rinse water. There is a limit beyond which it is uneconomical to try to rinse out more soda. This limit is reached when there is about 0.5% soda left in the pieces and the pH is around 8.3.

For the older type of open-width neutralizers—the slow-speed machines with a series of rinsing and soda tanks—the first soda tank may contain up to 30 g.p.l., each of four succeeding tanks containing 5 g.p.l. less than the previous tank.

In neutralizing short pieces, the general rule is to shorten the time in proportion to the length of the pieces. This is logical, but there is again a limit below which improper neutralizing may result; not less than 10 min. for the first rinsing, not less than 10 min. for running in soda, and at least 15 min. for final rinsing.

Piece-dyed or stock-dyed goods should always be re-acidified after neutralizing, so that the pH is returned to the acid side at about pH 5. Two or three liters of 28% acetic acid in the machine about 5 min. from the end of the final rinse will accomplish the acidification of each 60-yd. piece.

Abstract of a paper presented at the 37th Annual Meeting of the Alumni Association of the Philadelphia Textile School.

American Impressions . . .

British visitor suggests coordination of our various groups

By J. R. S. GOODALL

Chairman, Diplomas Committee, Textile Institute, Manchester, England

***EDITOR'S NOTE:** At our request, Mr. Goodall wrote us the following notes giving his impressions secured when he and Frank Nasmith, president of the Institute, visited this country recently.*

AS A RESULT of desire for collaboration between textile technologists of the British Empire and the U. S. A. exceptional facilities and hospitality were accorded to your visitors, and the following remarks are based on a crowded but all too brief program of meetings, visits to works, colleges and laboratories, ranging from the Carolinas to Montreal.

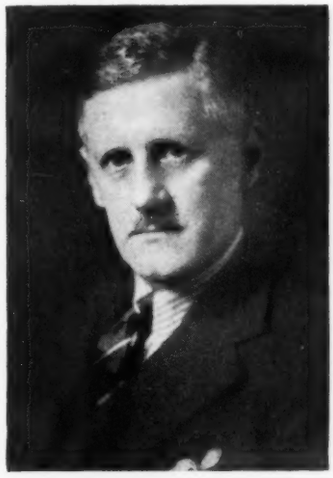
The first noticeable differences between your country and ours were the high standard of American development on the mechanical side of the industry and their more purely commercial aspects of textile research, rather than the more fundamental investigation of textiles, and the development of new materials which is resulting from it in Great Britain.

It appears that a larger percentage of British research is on behalf of producing works, and much of it is destined to bring into being new textiles instead of improving the production or reducing the costs of present types of materials.

Novelties do attract the consumer and, when they have real merit, bring an adequate return to their producer, while purely competitive materials made throughout the world have generally to use a reduced price lever to pry them out of the world textile rut.

It was very interesting to find the view that the well-being of the whole textile trade is the main factor in establishing satisfactory conditions at any individual works; such an outlook has undoubtedly come to the fore in Great Britain in recent years, and, coupled with evidence that the pooling of ideas has already produced valuable progress in textile production, ought to lead American textile leaders to ask themselves whether any isolationist policy is in their own best interests.

If the field can be further extended to all English speaking peoples, textile research, which in America appears to spring mainly from the consumer, and in Great Britain emanates from and is largely carried out by the producer, should, if amalgamated, place a very complete picture of up-to-date textile technical knowledge at the disposal of mill executives.



J. R. S. Goodall, chairman of Diplomas Committee, Textile Institute

Serious Duplication

The survey recently made did show definite instances of sheer waste of effort, where work was in progress on problems which had been fully investigated previously, and on which full information would have been available, had there been any lateral liaison, *or if one central body, acting for every section of textile production and research*, had been given the opportunity of collecting and disseminating the data.

I thought one particular journey in a New York taxi gave me an example of your different methods in America.

My driver was taking me down an avenue where if one travels at 20 m.p.h. all traffic lights become green as reached. He opened his throttle full as soon as the light changed, got up to about 45 m.p.h., pulled up at next light with screaming brakes and repeated this cycle at every block. The driver himself was remarkably capable in every way, but I felt that conservation of energy by a little coordination of forethought and skill would have got us to our destination equally quickly. On inquiring why he did so, he informed me that if he didn't, he would be telescoped from behind as all the other drivers did it.

Without appearing to be critical of your methods, I would like to ask you if you are coupling your undoubted skill with the adequate amount of forethought, and if it would not be possible by co-operation with the other textile trade drivers to cut out much of the wear and tear of unnecessary competition.

I saw many excellent works and research laboratories, and met with your learned societies, but gathered little evidence that they had any sort of machinery for liaison with one another, even though working on identical problems; nor any focal hub to which all their spokes of progress were attached.

We of the Textile Institute believe that we act in such capacity in the British Empire without in any way usurping the position which rightly belongs to Government departments, trade organizations, learned societies, technical groups of operatives, educational bodies, individual firms or research institutions.

We, individually as members of the Textile Institute, get our living from the textile trade, and we give our services freely to aid its progress by helping liaison, by acting as a channel through which all published information may pass to everyone interested, and where called upon by provision of help and advice.

That we are fulfilling a useful function is evidenced by our memberships, some 2,000, and the fact that almost every individual of importance in the textile and allied trades is a member, and works for our aims.

The Textile Institute is international in character and membership, and is desirous of finding a means of fuller collaboration with the textile trade in America.

Our textile trades are not dead nor are they going to be; it is up to us all to do our bit in curing their present ailments.

We have much to learn from your methods and equally much to give.

How can this best be achieved?

Surface-Active Chemicals

Methods for determining wetting-out and detergent properties of various types of compounds

By GEORGE A. THOMAS

TO MAKE a complete and exhaustive examination of each of the surface-active chamicals now available for use in textile processing would place a heavy burden on the laboratory and technical force of the mill. On the other hand, it is feasible for the mill to make a preliminary examination from which one can decide with a fair degree of accuracy whether or not a particular compound warrants further consideration. The method employed for making such a preliminary examination has been used for several months and has been found to be reliable. A number of tests can be carried out in a short space of time, and the equipment necessary is not expensive. From the results of the tests it is possible to classify the product under consideration according to its principal characteristics. This information serves as a basis for judging whether or not the compound is likely to be of value in any given operation.

In a previous article (TEXTILE WORLD, July, 1938) it was pointed out that surface-active chemicals can be put into three groups according to their wetting-out and detergent properties. Such a grouping is as follows:

1. Good wetting-out; poor detergent properties.
2. Good detergent; poor wetting-out properties.
3. Good wetting-out; good detergent properties.

The writer has found that the most satisfactory method for determining the wetting-out speed of surface-active chemicals is an adaptation of the Draves' method. However, some investigators are inclined to favor the canvas-disk method, because it is more rapid and requires less material.

Modified Draves' Method

For use in the Draves' test several pounds of soft-spun knitting yarn 35/2 are purchased, in order to insure a uniform supply for a considerable period of time. It is essential that this yarn be of such a nature that a skein made from the yarn will not kink or twist when suspended at a single point on the skein. The yarn is wound into 5-gram skeins on a Brown & Sharpe yarn reel, or similar device, the day before the tests are to be made. This is an essential requirement, since it allows each skein to come to an equilibrium of tension and moisture content.

If the surface-active chemical under consideration is sufficiently soluble to permit making a 10% solution, 100 grams is dissolved and made up to 1 liter, using the water used in the processes of the mill. (This provides an accurate method of comparison for that given mill and process. If distilled water is used, the results may be misleading; this is particularly true where the plant water is hard or contains an unusual impurity.) By using aliquot parts of the 10% solution and making up the test bath to 500 c.c., one can quickly prepare any strength of solution.

If the product is not sufficiently soluble to permit making of a 10% stock solution, a weaker stock solution (say 5%) can be prepared, or the exact amount can be weighed out for each test. It is desirable to make three sets of wetting-out tests. One set is made in a neutral solution; the second, in an acid solution; and the third, in an alkaline solution. If, in making up the various acid and alkaline solutions, one finds that the solution becomes excessively cloudy or shows signs of precipitating, it is needless to continue the test under that condition where the breakdown occurs.

The acid solution is made by adding sufficient sulphuric acid to the test solution to give a 1% concentration. The alkaline solution is made up in the same way with soda ash. The acid solution has a pH value of 0.75; the alkaline, 11.1.

In making the actual test, a 1½-gram hook sinker is looped into the cut skein at the bottom. An anchor weighing 20 to 25 grams is attached to the sinker by means of a strong, flexible cord. The solution to be tested is placed in a 1-liter cylinder and allowed to remain there 1 min. for bubbles and foam to subside. The skein is held above the surface of the solution by means of a paper clip. The skein is released from the paper clip and at the same time a stop watch is started. The wetting-out speed of the solution is recorded as the number of seconds between release of the skeins and the slackening of the cord connecting the sinker and anchor. The results are then plotted on log-log paper. (Keuffel & Esser 3x2 cycle No. 358-112L is convenient for this purpose.)

Theoretically, at least, the wetting-out speed should make a straight-line curve on log-log paper; but in most cases there are a few points that are off the straight line. Therefore, in making a test of this nature, one will find it advisable to plot the actual points, rather than to draw a straight

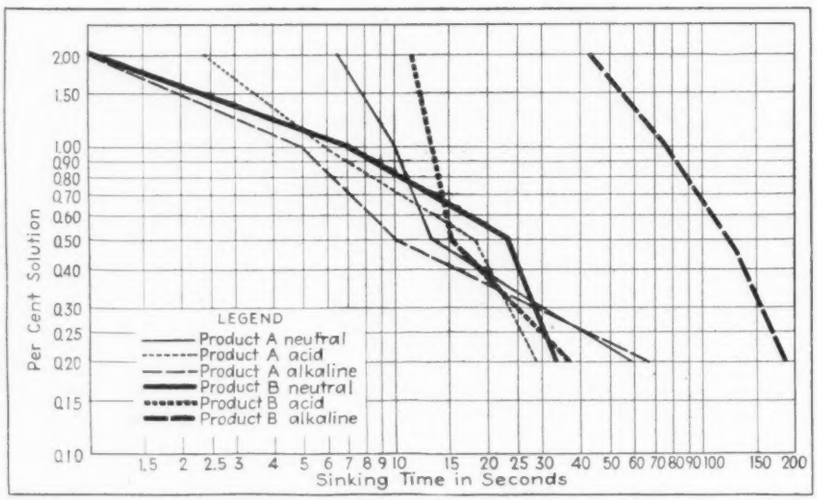


Fig. 1. Wetting-out properties under various conditions of two types of surface active chemicals

line and to indicate the points that are off. This is especially true where a number of samples are being considered at one time.

The chart shown in Fig. 1 is a typical two-product comparison. It will be seen that Product A has essentially the same wetting-out speeds in neutral, acid, and alkaline solutions. It therefore suggests further consideration in nearly all textile processes. The tests in neutral and acid solutions indicate that the properties of Product B are not quite so good as those of Product A, but this could readily be offset by a difference in price of a few cents a pound. Product B acts better in acid than in neutral solutions; this indicates that it would not be particularly useful in operations in which alkaline solutions are employed, such as vat dyeing, wool scouring, etc.

The chart indicates further that in low concentrations Product B is superior to Product A. This is evidenced by the slope of the curves from the 0.5% solutions to the 0.2% solutions. For example on a pound-for-pound basis Product B would be superior to Product A in dyeing in a paddle-type hosiery dyeing machine where the bath ratio is 1:30; on the other hand, in a rotary dyeing machine where the bath ratio is 1:15, the two products might be of equal value.

Canvas-Disk Method

The canvas-disk method of determining the wetting-out speed of surface-active chemicals is more rapid than the Draves' method; but it does not provide so true a picture. It is probable that the warp size present in most cotton woven fabrics is responsible for the irregularities in the results. However, the canvas-disk method will indicate whether or not it is worth while to make further tests.

Disks are cut or stamped with a circular die of a convenient diameter, such as 15/16, 1, or 1-1/16 in., from a moderately heavy canvas or duck, such as a No. 10 duck. The test solutions are made up in the various strengths to be tested, adjusted for temperature, and placed in beakers. A disk is placed in a thistle tube or funnel, which is inverted in the solution with the flare of the funnel resting on the bottom of the beaker. The disk is, therefore, submerged beneath the surface of the test solution. The wetting-out speed is recorded as the number of seconds between the time the funnel hits the bottom of the beaker and the time the disk hits the bottom of the beaker.

It has been suggested that surface-tension measurements of solutions of surface-active chemicals could be used as a measurement of surface activity or as a method of evaluating these products for textile processing. Surface-tension measurements do not, however, give a reliable basis of comparison, as some of the available surface-active chemicals which show rapid wetting-out results do not lower the surface tension to the same degree as do other materials that have a slower wetting-out speed.

Fig. 2. Apparatus used in making tests by Draves' and by canvas-disk methods

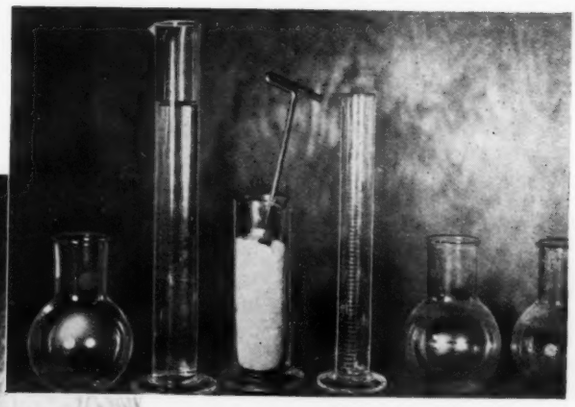


Fig. 3. Apparatus used in making rapid ether extraction for detergency tests

Detergency Tests

If a Launder-Ometer is available, detergency tests can be run on any type of artificial soil applied to any type of fabric. The instrument will permit the investigator to run several tests at once, using several products and several strengths of solution. If a Launder-Ometer is not available, or if a uniformly applied standard soil cannot be secured, an improvised method can be used that checks closely with the results obtained with the Launder-Ometer.

For use in this test obtain a sufficient amount of lime-pulled wool to insure a uniform supply for a large number of tests (the grade known as M1 is satisfactory). The wool is carefully opened by hand and thoroughly mixed. A 50-gram sample of wool is then soaked for 1 min. in three successive baths of 2 liters each, containing 0.1% soda ash and 0.1% solution of the surface-active chemical being tested. A temperature of 120° F. is maintained throughout the test. The wool is then given two rinses in plain water at 110° F. Between each bath the wool is run through a wringer. It is dried at a temperature not to exceed 180° F.

The efficiency of the scouring of wool, which is a measure of detergency in its truest sense, is then made by color comparison and ether extractions. To make the ether extraction, a 5-gram sample of wool is placed in a small cylinder, and exactly 100 c.c. of petroleum ether is added. A plunger is pressed against the wool in much the same manner as the plunger in a pump is worked. The sample is given ten strokes of the plunger, after which 50 c.c. of the ether is drawn off into a tared flask and evaporated. The increase in weight represents the amount of grease remaining in the wool after the treatment with the surface-active agent. The difference between the weight of this residual grease and the weight of the total extract obtained from an unscoured sample of wool represents the amount of grease removed in the scouring test.

By dividing the weight of the grease removed in scouring by the total weight of the grease in the unscoured wool, one is able to express the detergent power of the surface-active chemical in per cent. In Table I are given the results of detergency tests made by this rapid method on a number of different products.

(In the next article of this series the author will discuss the use of surface-active chemicals in certain specific textile processes.—*Editor.*)

TABLE I. Results of rapid tests for determining detergent power of surface-active chemicals

Product	Detergent Power
A	76.5%
B	91.3%
B Without soda ash.....	54.8%
C	86.9%
D Shipment 1/4/38.....	93.8%
D Shipment 2/10/38.....	91.8%

Timing Production

To meet delivery dates made possible by control system for seamless hosiery mills

By THEODOR F. HIRSCH
Superintendent, Lawler Hosiery Mills, Inc.

FANCY styles in children's and men's hosiery are usually manufactured strictly to order, and many times in patterns specifically confined to certain customers. Therefore, it is imperative for a mill to be able accurately to predict the delivery date of any order, in any size or style, at the time of its acceptance. The dates promised by the mill on its order confirmation must not overload any department, yet should if possible keep maximum production in process, regardless of how complicated and varied the machine setup may be.

A simple, easily controllable, yet highly adequate system is given herewith. It allows for planning of the most complicated set-up, but requires no additional clerical help, and is clearly understandable by any executive or department head desiring to inspect it.

Steps to be taken prior to installation of this system are as follows: (1) Make time studies on each machine, in each group, for each type of merchandise — the figures obtained should include the usual allowance for machine changes, waste, etc., based upon past experience; (2) Determine from previous records exact average size assortments for each machine-group and type of merchandise.

After completion of these preliminary steps, the production department establishes a chart such as that shown in Fig. 1, showing production capacities, breaking down the available machinery as accurately as possible. The machine-groups shown in Fig. 1 are, of course, entirely arbitrary and will be different for each mill.

On the right side of each group are drawn lines indicating the amount of business booked. Solid lines represent actual knitting orders placed against definitely detailed orders or mill stock requirements. Shaded areas indicate reserve capacities intentionally set aside by the mill in instances where buyers have placed bona fide open orders, with color and

KNITTING ORDER CHART

MACHINES INSTALLED				WEEKLY CAPACITIES				DELIVERY DATES: WEEK ENDING
				RIBBERS		KNITTERS		January: 2 9 16 23 30 — February: 6 13 20 27 — March: 6 13 20 27
GAGE	TYPE	DESCRIPTION	ATTACHMENTS	3/4 5/8 7/8 Doz.	Anklets Socks Doz.	3/4 5/8 7/8 Doz.	Anklets Socks Doz.	
36	Ribbers	4 color	Elast. inlay. 1 feed	2,000	2,500	–	–	
	Ribbers	3 color	Elast. inlay. 1 feed	800	1,000	–	–	
	Ribbers	2 color	Elast. inlay. 1 feed	1,500	1,875	–	–	
	Ribbers	1 color	Elast. inlay. 1 feed	900	1,175	–	–	
	Ribbers	2 color	Elast. inlay. 2 feed	1,600	2,000	–	–	
	Knitters	Plain	No DS or HSH	–	–	1,000	1,250	
	Knitters	Plain	With DS/HSH	–	–	1,000	1,250	
	Knitters	4 color	No DS or HSH	–	–	2,100	2,625	
	Knitters	3 color	No DS or HSH	–	–	1,500	1,875	
	Knitters	Crinkled top	With DS/HSH-No rib.	–	–	5,300	6,625	
	Knitters	Sinker rex plate	No DS/HSH	–	–	1,200	1,500	
48	Ribbers	4 color	Elast. inlay. 1 feed	1,000	1,250	–	–	
	Ribbers	3 color	Elast. inlay. 1 feed	1,100	1,375	–	–	
	Ribbers	2 color	Elast. inlay. 1 feed	1,500	1,875	–	–	
	Knitters	Plain	No D.S. or H.S.H.	–	–	800	1,025	
	Knitters	4 color	No D.S. or H.S.H.	–	–	2,000	2,500	

FIG. 1

ORDER FLOW CHART

CUSTOMER: J. C. Smith Bros.

DATE	OUR ORDER NO.	OUR ORDER STYLE	CUSTOMER'S ORD. NO.	CUSTOMER'S ORD. STYLE	DOZ.	DUE	KNITTING ORDER DATE	KNITTING ORDER DELIVERY TO GRAY SCHEDULED	STARTED RIBBING	STARTED KNITTING	COMPLETED IN GRAY	SHIPPED
6/10/38	3110	546	34415	210	500	7/15/38	6/12/38	7/10/38	6/13/38	6/15/38	7/6/38	7/14/38

FIG. 2

Charts required for production control in seamless hosiery mill. Fig. 1, Knitting Order Chart. Fig. 2, Order Flow Chart

size details to follow later. Likewise, the lines are shaded to indicate material put in work by the manufacturer when, on the basis of previous seasons' business and relations with certain customers, he reasonably expects re-orders; and to take care of other similar contingencies.

Irrespective of the fact that a separate knitting order might be placed for each particular customer's order, or that stock might constantly be carried on certain steady sellers, an entry is made in both the ribbing and knitting sections of the chart for every knitting order placed. Thus, the extent to which each group of machines has orders is shown at all times.

Knitting and sales departments are supplied with copies of the chart kept by the production department, and a weekly notice is sent to each, informing them as to what machine-groups to extend to later dates. In this manner, the following important advantages are achieved: (1) the sales manager is enabled to supply exact delivery information to customers when they place their orders; (2) the knitting-room foreman is able to predict his labor requirements, both direct and indirect; (3) the purchasing agent has a definite guide for supplies needed; and (4) the production manager is able to use each group of machines for anything that it is capable of doing; i.e., if necessary he can use four-color groups to manufacture two-color styles, etc.

In addition to the knitting order chart already described, an order flow chart is also maintained by the production department. This chart, shown in Fig. 2, is arranged by customers, and its purpose is to record daily movements of each knitting order from the ribbing to the shipping department. The chart enables the production manager to follow up any delays and ascertain and eliminate their causes. Entries are made on the basis of daily reports from the gray departments showing "Orders Started" and "Orders Completed." Copies of these reports are supplied daily to the finishing departments, and gray stock and dyehouse activities are automatically regulated from these copies. Dyehouse orders are not made out until a knitting order is well under way, and no boxes are ordered (from the box manufacturer or the box department, as the case may be) until a reasonable length of time prior to the anticipated date of gray completion of an order. A balanced stock is kept.

The knitting-room foreman is held fully responsible for the timing of his production, so that actual production will not deviate from predetermined figures. In case of unavoidable delays due to yarn or parts shortages, sickness, or any other cause, he notifies the production department, which, in turn, revises its figures and notifies finishing departments, sales office, and the customer.

In this manner the production manager is at any time able to ascertain without going to any one else for information, the exact position and condition of each order. As a consequence, he is able to hold merchandise inventories to a minimum.

Since all knitting orders carry an extra copy for the yarn department, on which is shown the exact poundage of each yarn required and also the dates of completion computed from the production chart, the yarn department can schedule its supplies weeks or even months ahead of time, yet so closely that at no time need the mill have on hand a supply exceeding two weeks' consumption, which allowance is necessary to cover possible delays in transportation, and other similar interferences.

Hosiery Agreement Signed

3-year contract effective Sept. 1

VARIOUS innovations lend interest to the new full-fashioned hosiery agreement which was signed at Philadelphia July 15, by the Full Fashioned Hosiery Manufacturers of America, representing 58 mills, and the American Federation of Hosiery Workers, representing 30,000 workers. Two chief features of the contract are: (a) it covers a three-year period, beginning Sept. 1, as against the normal one-year contract; (b) labor rates are not stated; agreement stipulates that present rates and conditions shall continue—but includes provisions giving wide latitude for modifications in negotiations between the union and individual mills.

The failure to disclose wage and other labor terms was part of an effort to prevent such information from reaching competitive mills, especially those in the South. Industry and union leaders, commenting upon the pact, asserted frankly that the trend toward disintegration of the northern hosiery industry was a major point considered in shaping the provisions.

Other of the agreement's main points follow: (a) Technological or other changes in production shall justify mill in asking reconsideration of wage rates; (b) if general business conditions become better, union can ask upward revision and if they become worse, manufacturers can ask downward revision, of wages; (c) both sides agree to no strikes or shutdowns for period of contract, but failure by either side to follow impartial chairman's rules gives other party right to strike, or shut down plant; (d) Dr. George W. Taylor is impartial chairman for term of pact.

Taylor Reviews Agreement

Asked by TEXTILE WORLD to comment on the aims and significance of the new agreement, Dr. Taylor said:

"The new National Labor Agreement that becomes effective in the full-fashioned hosiery industry on Sept. 1, 1938 is based upon principles of collective bargaining that are sound because they have been developed in the light of experience rather than in the heat of conflict. The objective of the agreement is to insure that the North will share with the South in the development and expansion of the industry. . . . .

"Recognizing that this objective can be attained only through a long-term program, the new contract is for a three-year period, during which time strikes and lockouts are outlawed. This not only attests the determination of both parties to 'do a job,' but indicates how collective bargaining can evolve to the point where policies depend upon reason and not upon the exercise of economic strength."

Southern Viewpoint

Southern manufacturers interpret the agreement as designed largely to help the union get a foothold in the South. In support of this they point out that the agreement permits individual contracts. It is expected that the hosiery union now will make a great effort to organize the South, and that it will offer very lenient contracts to southern mills, with the hope of tightening up on renewal.

Southern hosiery men do not believe that the full-fashioned workers can be organized sufficiently to put pressure on mills for contracts as long as wages and working conditions are so much better than in other branches of textiles.

Cross Diagonal Stripes

On loop-wheel spring-needle and pattern-wheel latch-needle knitting machines

By J. F. CAHILL

KNITTING cross diagonal stripes by the tuck-and-knit method on loop-wheel or pattern-wheel machines presents several unusual problems. One of these, which puzzles even knitters who are thoroughly familiar with the effect of lap and the slanting of stripes, is the failure, at the crossings, to clear the tucks made at preceding feeds. This and other problems of cross diagonal striping, in both one color and two colors, are treated in this article. This method of producing cross diagonals should not be confused with the reverse-plating process which was described by George L. Logan, in the January, 1938 Textile World.

Every knitter familiar with design knitting knows that pressers or wheels, which are cut or set up so that the design divides evenly into the number of needles in the cylinder, will produce the design in vertical lines. Also, it is known that the addition or deduction of one needle for each presser or wheel carrying the design, will cause the design to slant or form in a diagonal direction.

However, it is obvious that no presser or wheel can be both plus and minus; nor can pressers or wheels of the same size, at different feeds, be plus at one feed and minus at another feed. The limitations in the division of the number of needles in circular knitting machines and the necessity for providing for gain or loss in pressers and wheels require the distance between the stripes slanting in one direction to be one or two needles less than the distance between the stripes slanting in the opposite direction. In two-color designs, the difference is negligible.

It may not be possible to divide the needles of a machine into every conceivable division for cross diagonal striping, but it is possible to obtain a wide enough range of divisions so that a suitable division for almost any purpose can be selected. As an example, consider a loop-wheel spring-needle machine which has 1,102 needles and is equipped with 4 feeds. In dividing 1,102 by 11 a remainder of 2 is obtained. Therefore, a presser with a circumference equal to any multiple of 11; i.e., 88 or 110 will be a plus-2 presser. Hence, 1,102 ÷ 88 = 12½ plus two, and 1,102 ÷ 110 = 10 plus 2. This will cause the stripe to slant upward to the left as seen from the outside of the machine. In dividing 1,102 by 12, a result of 91 plus 10 or 92 minus 2 is obtained. A presser with a circumference equal to any multiple of 12; i.e., 96, 108, or 120 will be a minus-2 presser, and will cause stripes to slant upward to the right.

Other divisions on other machines are possible and stripes can be made one, two, or three needles wide. However, it is well to discuss at this time the failure, at the crossings, to clear the tucks made at preceding feeds. To eliminate this trouble, machines are equipped with two pressers or two wheels at each feed. To explain the purpose of these we will consider a machine with an even number of feeds; and with the feeds numbered 1, 2, 3, 4, etc., in the direction of rotation, with the odd-numbered feeds knitting the light color and the even-numbered feeds knitting the dark color. Feed No. 1 has a design presser (cut 1—print 10) and a safety presser (cut 11—print 1); feed No. 2 has a design presser (cut 1—print 11) and a safety presser (cut 10—print 1). Similarly to feed No. 1, feed No. 3 has a design presser (cut 1—print 10) and a safety presser (cut 11—print 1); and similarly to feed No. 2, feed No. 4 has a design presser (cut 1—print 11) and a safety presser (cut 10—print 1). On feed No. 2 the safety presser is set so that its print engages the same needle that the design presser at feed No. 1 caused to tuck. Being the same size as the design presser at feed No. 1, it will always engage the needle and clear the tuck, even though the cut in the design presser at feed No. 2 should engage the same needle. Without the safety presser, the design presser at feed No. 2 could readily

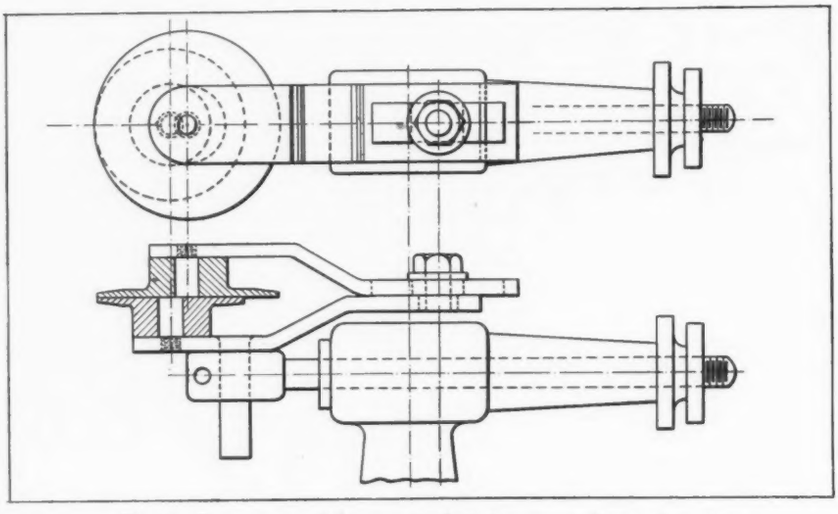


Fig. 2. Presser stand for use in knitting cross diagonal stripes

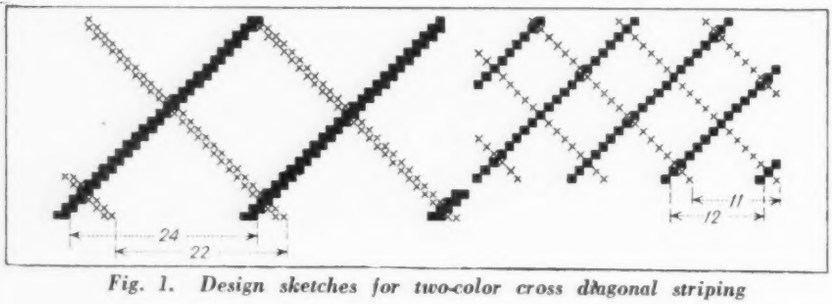


Fig. 1. Design sketches for two-color cross diagonal striping

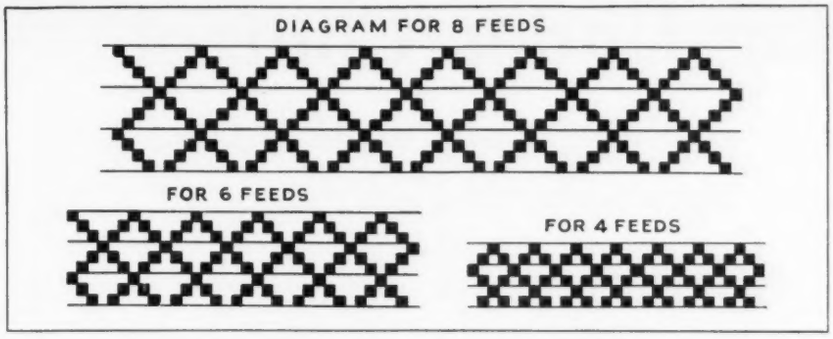


Fig. 3. Diagrams of one-color cross diagonal figures

repeat tucks made at feed No. 1. The same trouble might be experienced at the other feeds.

In the design sketch (Fig. 1) the solid blocks are assumed to represent one color, while the crosses are assumed to represent the other color. Two sets of divisions are shown, as each is possible with 1,102 needles, and may be possible with other numbers of needles.

A conventional sketch of a presser stand, for leaded-needle machines, with means for holding two pressers in a convenient position for the knitting of cross diagonal stripes is shown in Fig. 2. This attachment can be used to knit cross diagonals of tucked stitches in a one-color fabric.

Cross diagonal stripes of one color slanting in both directions can be made on loop-wheel spring needle machines, but due to the limited number of feeds, the resulting figures are rather small. The largest figure that can be made in one-color cross diagonal stripes on any machine will have a width in wales and a height in pattern courses equal to the total number of feeds on the machine. Also, the lap will always be one-half the width of the figure plus any number of times the whole width. Diagrams of cross diagonal figures for 4-feed, 6-feed, and 8-feed loop-wheel machines are shown in Fig. 3. On the 4-feed machine the width of the figure is four wales and the height is four pattern courses. The needles in the cylinder should be divisible by 4 with a remainder of 2; and the pressers or pattern wheels, which may be of any size, should contain a number of cuts which is divisible by 4 without a remainder. One presser or wheel is cut 1 and print 3, while the other is cut 1x1. The 1x1 presser may be of any size that will divide by 2, as the lap will have no effect upon it. The lap is 2 needles—plus or minus—the setting can be seen in the diagram. For a 6-feed machine the figure is 6 wales wide and 6 courses high; and the cylinder needles should be divisible by 6 with a remainder of 3. The pressers may be of any size that will divide by 6 without a remainder. For an 8-feed machine, the figure is 8 wales wide and 8 courses high; and the cylinder needles should be divisible by 8 with a remainder of 4. The pressers should be divisible by 8 without a remainder.

Larger figures can be produced on latch-needle pattern-wheel machines, which are equipped with a much greater number of feeds. A latch-needle pattern-wheel machine with 24 feeds will produce a figure 24 wales wide and 24 courses high.

New Trends Help Carpets

Better designing and merchandising give lift

NEW TRENDS in carpets and rugs are adding their weight to the influences which should make the fall 1938 season, recently opened, a successful one. The necessity for replenishment after a slack season will be supported by new buying interest developed through new styles, new carpet applications and vigorously pushed merchandising.

The all-over leaf or botanical patterns in two or three tones of the same color have culminated this season after a season or two of development, to a point where they practically replace the solid color, broadloom carpet.

Some manufacturers have developed spatter effects which are interesting, and which, when used in carpeting, avoid any necessity of carefully matching up the pattern on parallel lengths.

The more extreme types of Modern patterns in rugs and carpets have been replaced to a large extent by the so-called "Swedish Modern." This is a development of Swedish primitives, chiefly textural effects, which go well with modern American furniture. Other patterns that continue to attract interest are the 18th century patterns and American orientals.

In colors, greens, blues, burgundies, tans, etc., are all in demand, the district more or less determining which color is in the forefront. Thus, few tans are sold in metropolitan areas, but are strong in rural districts; the Pacific Coast is going in for some of the newer light pastel shades.

The industry as a whole has made a successful drive in developing the tailor-made, or custom-cut sizes of rugs in broadloom fabrics. It is the recommendation of at least two large manufacturers that rugs cover the floor to within 6 in. of the wall. One particular line offers 138 custom-cut sizes with 6-in. jumps to 15 x 30 ft.

The swing toward rugs which nearly cover the floor and away from the scatter sizes, is bringing more interest in the use of carpeting which covers the room from wall to wall.

On all sides is evidence of modernized merchandising plans. In one quarter a successful plan has been developed stressing the ensemble of the room by offering to the consumer kits containing samples of carpets, together with samples of wallpaper, drapes, upholsteries, etc., in harmonizing patterns or colors. It is made easy for the consumer to get these kits and a very high percentage of sales is reported to have been made to consumers who get them.

The fact that manufacturers are watching the consumer market closely with an eye toward making what will sell is evidenced in a specially styled line of medium-size bedroom rugs, in about 6 x 9 ft., which it has been found are taking the place of smaller scatter rugs.

Latex-covered backs to rugs are being widely offered, not only to keep the rugs from slipping on the floor, but as a structural feature binding the pile more intimately into the rug fabric and protecting the rug from damage by moisture from beneath.

Everything Under Control

Automatic regulation of dyeing and finishing processes improves quality, cuts costs, at Kent Mfg. Co.

ONE OF the outstanding trends in the textile industry—particularly in the processing divisions—is that toward complete instrumentation to give automatic control of all variables in a given operation. Outstanding examples of what can be accomplished in this direction are the installations at Kent Mfg. Co., Clifton Heights, Pa.

Kent's first step, taken about six years ago, was the installation of time-temperature cycle controllers in the piece-dyeing department. The next step, made two or three years later, was to substitute coordinated automatic control for manual control in the raw-stock dyeing department. The third step, which is now nearing completion, provides automatic control and coordination of all variables in the wet-finishing department; the control system is already in operation on one washer and shortly will be in operation on six more.

Three Similar Installations

Each of the three installations was made by Bristol Co., Waterbury, Conn., and each is said to be the first coordinated process control system of its type ever installed in a textile mill in this country. Although each of the three control systems is different, since each controls a different process, all three are similar in operating principle. That is, each consists of regulating and controlling instruments, coordinated by a "process cycle controller," automatically regulating all operations in the process, in proper schedule and sequence. Each control is actuated by cams cut, in the mill's machine shop, to the specifications of the man in charge of the operation. The cams, as they slowly revolve, raise and/or lower levers so arranged that they press lightly on the cam edges. These levers, in turn, control the opening and closing of valves; starting, stopping and reversing of motors; maintenance and/or change of liquid level; and other variables, as may be desired. All cams are readily removable, in case it is desired to revise the cycle of operations.

In each instance, all controlling mechanisms are located on a central panel placed in or near the office of the department head concerned. Signal lights, which appear over machines at specified times during the cycle, are duplicated on the control panel; it is thus possible for the department head to tell at a glance the exact point in the cycle which has been reached by any machine.

Advantages of Dyehouse Control

Many advantages have accrued to Kent through automatic control of dyeing. Important among these is assurance that every lot of each color or fiber will receive exactly the same treatment as every other similar lot. Previous to installation of the system it was found that some lots were, through forgetfulness or negligence, boiled longer, faster, or harder than other lots of the same type. Hence, formulas appeared to produce one shade one time and another, another time. It has now been determined that, in most instances, such variations were due not to stock or dye, but to variations in processing. With this factor placed under control of the dyer, the variations have largely been eliminated.

Other advantages include an increase in tensile strength of about 15%, as much as 100% increase in production, reduction of required steam pressure from 80 to 40 lb. per sq.in., and complete elimination of "poling."

In operation, the dyer places the proper time-temperature cam on the controller, located immediately in front of his desk in the dye laboratory (Fig. 1), sets the controller in proper starting position, and presses a button which lights a signal on the panel and another over the vat in question, indicating that the controller is in readiness. The floorman, when he has completed loading of the vat and addition of the necessary water, dyes, and chemicals, presses another button at the dye-vat; this puts the machine in operation.

The time-temperature cam now causes the temperature of the liquor to be raised gradually and evenly, in a predetermined number of minutes, to 210° F. When the liquor in the vat reaches 210° F., the controller maintains it at this point for another period, the length of which has been previously determined by the dyer and cut into the cam.

While this is taking place, another cam, likewise located on the main control panel, is also in operation, controlling the motor and paddle shown in Fig. 2, and also the steam valves. The liquor in the vat is agitated by this paddle throughout the entire dyeing operation. At fixed intervals, the direction of rotation of the paddle is reversed. Thus, the solution first travels upward around

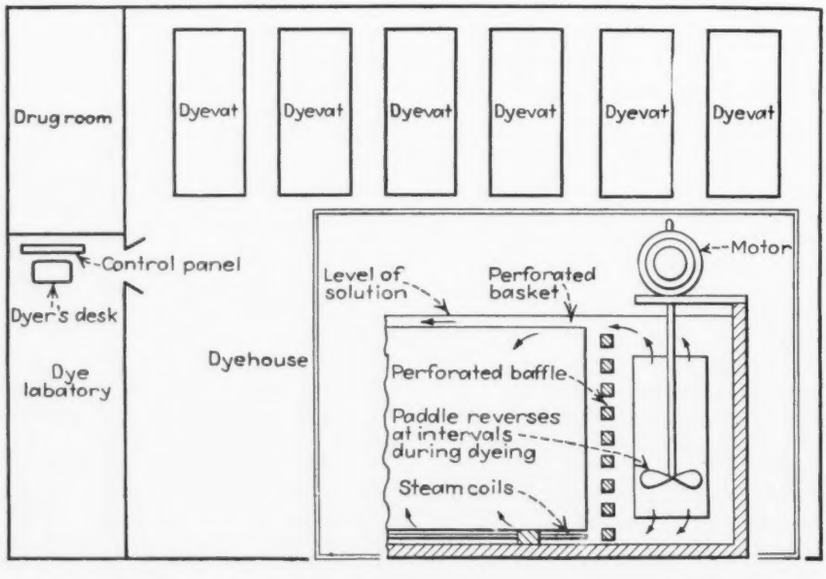


Fig. 2. Floor plan of Kent Mfg. Co. dyehouse, showing location of raw stock dyevats, dye laboratory, and control panel. Insert, detail of raw-stock dyevat; arrows indicate direction of flow of liquor in vats

the sides of the vat, over the "cage" containing the stock, and down through the wool. Then, at the end of a certain length of time, pre-determined by the dyer, the direction of rotation of the paddle is reversed and the liquor flows down, over the steam coils, and up through the stock. By this method of agitation it is assured that every bit of wool comes in contact with the dye and also that a uniform color throughout the batch will be achieved.

The steam control prevents boiling over of the liquor when the direction of agitation is such that the solution flows up the sides of the vat, and reaches the top before having been cooled by the wool. Such prevention is accomplished by arranging the controller so that it will shut off the steam for a short period before the paddle is stopped, leave both steam and paddle inactive for a short while, then reverse the paddle and, finally, after another short interval, turn on the steam once more. At the end of the "boil" the process is halted automatically, and signals light—over the vat and in the dyer's office—to indicate that it is time for sampling.

Should the sample be not quite up to shade, the necessary "add" is made and the machine again started. At the end of a definite number of minutes the signal lights again appear, and the process is again automatically halted.

When the proper shade is achieved, the control causes the machine to stand idle until the liquor in the vats cools to the proper temperature for addition of chrome. At the correct time a second signal light appears. The chrome is added and the machine restarted. The cam brings the solution gradually to a boil, holds it there a definite length of time, stops the machine at the proper moment, and lights a signal indicating dyeing has been completed.

Only four different cams are required for production of all shades dyed at Kent Mfg. Co.

In the piece-goods scouring department the factors controlled are water temperature, liquid level, opening and closing of water inlet and outlet valves, feeding of soap and alkali, and timing of the various steps in the process. The controls are arranged so that the same equipment can also be used for neutralization after piece-goods carbonizing.

Temperature of water for all washers is controlled by means of a single proportioning valve, which mixes hot and cold water until exactly the correct temperature is obtained. Each washer has an individual, automatic liquid-level control which, at all times, assures the proper amount of water in the vat—raising or lowering it, as may be required, for scouring or rinsing, and preventing any overflow or excessive water in the machine. This has made possible a 50% cut in water consumption, due to the fact that no water is wasted; this, in turn, has resulted in economies in water softening and heating.

Scouring Time Cut

Time required for the scouring operation has likewise been cut, the reduction amounting to approximately 40%. This too, is due in part to operation of the liquid-level controller. Before automatic control was applied, level of the liquid in the washers varied widely—as much as from 2 to 20 in.—due to the fact that the covering of suds made it impossible for operators accurately to determine the level at any given time. It was found that low water did not permit the washers to scour as quickly and thoroughly as controlled conditions make possible. Another factor having a bearing on reduction of time consumed by the scouring operation has been accurate controlling of the time of each operation, which assures that all similar fabrics will receive similar treatment. A signal light appears as each machine reaches the end of its cycle of operations, notifying the operator and the finisher that it is time to remove the fabric from the washer.

Speaking of the need for and value of such control installations, Mr. Alan Keay, secretary of the company and superintendent of the mill, said, "We believe our men to be at least as conscientious as, and perhaps more conscientious than, average textile operatives. But, even so, we have found that substitution of automatic for manual control has resulted in our machines working more economically and more uniformly. This type of control has given us several advantages, but I believe the improvement in the quality of our product has been as important as anything else we have gained."

Kent has been keeping up-to-date along other lines, too. A recent complete remodeling of its water filtering and softening plant was described in detail in the March, 1937, issue of Textile World. The mill's spinning equipment is 100% large-package, ring-frame. A completely automatic yarn conditioning machine, of most modern type, has been installed. Experiments in winding-room modernization are under way.

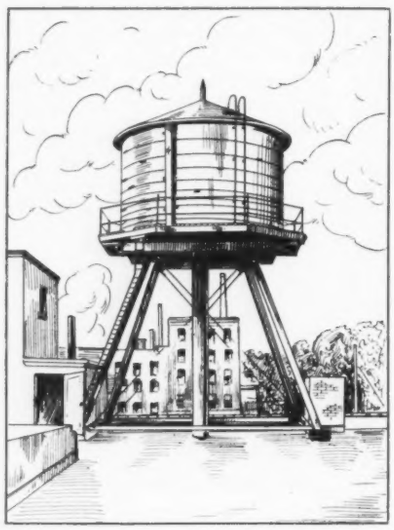
Fig. 1. Bristol Co. coordinated control panel which regulates operation of rawstock dyeing equipment at Kent Mfg. Co.

Fig. 3. Scouring machines now being equipped for coordinated control operation.

Tank Maintenance

Periodic inspection assures uninterrupted service by revealing need for painting or repairs

IN MANY of the older mills water tanks were placed in towers, which were made an architectural feature in the design of the building. In more modern mills the tanks are located where they can best and most economically serve their purpose, generally on elevated structures if a gravity supply is required. In restricted areas these tank supports will frequently be found on the top of a convenient building. Aside from special-purpose tanks, which will not be considered in this article, tanks can be divided into two groups—steel and wood. These are used to store water for fire protection, drinking, processing, and boiler feed and make-up. Tanks, piping, and supporting structures are an important part of the fire protective equipment, and should be given proper attention and care.



Wooden Tanks

Painting of the outside of wooden tanks is for appearance only. It seems to have no effect on the life of the tank lumber. Any good lead and oil paint will do for this purpose; but it should be brushed on thin, so that it will not prevent the evaporation of a slight amount of moisture that might seep through from the inside. Bolts have generally replaced the older steel hoop construction, and a periodic tightening of the bolts is advisable in order to prevent leaks. These bolts, or hoops, will corrode unless kept painted, and they should be carefully inspected at regular intervals. Even galvanized rods, or bolts, will eventually corrode. Two coats of a good lead and oil paint as a priming coat, applied after a thorough cleaning, scraping, and brushing to remove all rust and scale, then a finish coat of graphite paint, or some paint combining an inert pigment with oil, afford good protection for the bolts. Special care should be exercised in cleaning and painting the threaded ends.

Watertightness

Inside painting of wooden tanks is not recommended, as the swelling of the wood staves due to absorption of water determines the water-tightness of the tank, and painting would tend to prevent or retard this absorption.

Leaks can generally be repaired by any good mechanic, and should always be corrected immediately to prevent damage to the supporting members or structure.

Steel Tanks

Steel tanks for fire-protection service are generally elevated; and both the supporting structure and the tank itself, including heating and tell-tale devices, should receive regular and careful inspection. Re-painting of the supporting members and the outside of the tank should include removal of all dirt and bird-nest accumulation and a thorough scraping and wire-brushing of all parts where rust has made its appearance, even resorting to sand blasting if necessary. Old paint which adheres firmly to uncorroded steel need not be removed. Lattice work, clevis pins, ends of diagonal wind rods, exposed anchor bolts, inside channel columns near foundations where pockets are formed by batten plates should all receive special attention. It is often advisable to fill pockets near the foundations, which do not drain, with concrete.

Any good steel preservative paint is acceptable. It should consist of priming coat, or coats, of an inhibitory nature, followed by a finish coat designed to resist unfavorable atmospheric conditions. An example of this would be encountered when a tank is erected in close proximity to a smoke stack, or railroad, where coal smoke might introduce a weak sulphuric acid condition in wet weather.

A casual inspection will often suffice to show the necessity of outside painting and, as a general thing, this part of the program is not likely to be neglected. Equally important is the inside painting, and this is much more likely to be neglected. Careful consideration should be given the chemical and physical characteristics of the water which is stored, and a paint should be selected which will stand up under the special conditions indicated. No one specification is likely to meet all these conditions.

If the water in the tank is maintained at approximately the same level, repainting may sometimes be necessary only at or near the water's surface. But in order to be sure of this it may be necessary to empty the tank and make a careful examination of the entire inside surface.

Before the inside is painted, all mud, silt, and grime should be removed. The surface should be allowed plenty of time to dry. The drying time can be accelerated if forced circulation is set up by connecting an air compressor to the base of the riser and removing the roof hatch-cover. The same method can be used to speed up drying of the paint. This will also improve working conditions and minimize the hazard of paint poisoning. If painting is done in the winter months, best results will be obtained if the temperature is not below 45 to 50 deg. F.

In any event, before draining the tank, the company carrying the fire insurance on the plant should be notified and adequate temporary arrangements should be made which meet the approval of the insurance company.

Maintenance Personnel

Cleaning and re-painting is frequently handled by contract with itinerant painters, as this work is more hazardous than generally encountered by the mill's own maintenance men. Some mills, however, carry out the work with their regular crews. In either case, a careful inspection after completion of each coat is advisable, and all "holidays" should be faithfully touched up to prevent weak places where corrosion might set in.

While the painting is in process, it is advisable to renew all gaskets whether or not they show signs of leaking, and to check heater piping

for corrosion or plugging from sediment. Tell-tales should be overhauled and put in first-class condition. A faulty tell-tale has been known to spell disaster.

In modern construction, below the 0 to 5 deg. F. isothermal belt, heaters are being omitted and the tank risers increased in size to 36-in. diameter riveted-steel standpipe construction. It has been found that this affords ample protection against freezing. Where smaller risers and heating coils, protected by wood casing, are used, the casing should be kept tight and in good repair, to prevent leaks which might break down the insulating value of the filling around the pipes. The average useful life of this construction is about ten years. For tanks erected in climate above the 0 to 5 deg. F. isothermal belt, a heater is used with a radiator located in the bottom of the riser and connected to a suitable heater.

Some of the data in this article appeared originally in a bulletin issued by the Associated Factory Mutual Fire Insurance Cos., and the author wishes to express his gratitude to that company for permission to quote freely from that bulletin.

Lost Yardage

Detected by simple cloth-clearance records easily maintained

By BERNARD HELLER

CLOTH-CLEARANCE records, made quarterly or at some other convenient interval, and covering such factors as the quantity of each style manufactured, the amount of each style shipped, and inventories at the beginning and end of each period for each style, make possible the detection of losses, and put the mill on guard against any leakage which may be present. Such records may be compiled from weekly production records, shipping invoices, and the inventories taken at the beginning and end of each quarter.

BLANK WOOLEN MILLS

Summary of Styles — Quarter ending 6/30/38

Style	Yd. Woven Goods on Hand 3/31	Yd. Woven 4/1 to 6/30	Total Woven Yd.	Yd. Sent to Finishing Dept. 4/1 to 6/30	Theoretical Woven Yd. on Hand 6/30	Actual Woven Yd. on Hand 6/30	Yd. Finished Goods on Hand 3/31	Yd. Finished 4/1 to 6/30	Total Finished Yd.	Yd. Shipped 4/1 to 6/30	Theoretical Finished Yd. on Hand 6/30	Actual Finished Yd. on Hand 6/30
250	300	9,355	9,655	8,647	1,008	1,008	—	8,723	8,723	8,095	628	623
350	—	1,125	1,125	1,125	—	—	—	1,104	1,104	1,100	4	—
450	725	10,983	11,708	10,800	908	908	2,008	10,925	12,933	11,743	1,190	1,033
550	401	15,462	15,863	10,800	5,063	5,063	865	11,250	12,115	11,549	566	565
650	—	8,933	8,933	8,800	133	133	—	8,809	8,809	8,809	—	—
750	—	2,250	2,250	2,250	—	—	—	2,223	2,223	2,110	113	113
850	1,005	6,945	7,950	7,500	450	450	325	7,579	7,904	7,653	251	204
Totals	2,431	55,053	57,484	49,922	7,562	7,562	3,198	50,613	53,811	51,059	2,752	2,538

RECAPITULATION

Yd. woven goods on hand 3/31/38	2,431		Yd. finished goods on hand 3/31/38	3,198	
Yd. woven 4/1/38 to 6/30/38	55,053	57,484	Yd. finished 4/1/38 to 6/30/38	50,613	53,811
Yd. sent to Finishing Dept. 4/1/38 to 6/30/38	49,922		Yd. shipped 4/1/38 to 6/30/38	51,059	
Yd. woven goods on hand 6/30/38	7,562	57,484	Finished yd. on hand 6/30/38	2,538	53,597
Balance		00,000	Yd. production not accounted for		214

Form of statistical report which will help mills to detect lost yardage

Specimen Report

The specimen report shown was developed for use in woolen mills. Style numbers are listed in Col. 1. Col. 2 gives the yardage of woven but unfinished cloth on hand at the end of the period immediately preceding that which the report is to cover. Yardages woven during the period under surveillance are listed in Col. 3, and the totals of Cols. 2 and 3 are shown in Col. 4.

Col. 5 lists the yardage of the several styles which has been transferred to the finishing department during the period.

In Col. 6 are listed the theoretical yardages of woven cloth on hand as of the end of the period: these figures are obtained by subtracting Col. 5 from Col. 4; and in Col. 7 are listed the actual yardages on hand, compiled from the inventory taken at the end of the period.

Col. 8 lists yardages of finished cloth on hand at the end of the preceding period; Col. 9, the yards to which woven cloth, transferred to the finishing department during the period, actually finished; and Col. 10, the total of Cols. 8 and 9.

In Col. 11 are listed the yards shipped during the period; this, subtracted from the total finished yards (Col. 10), indicates the yards of each style which should, theoretically, remain in stock (Col. 12). These theoretical figures, when compared with the actual inventory as of the end of the period in question (Col. 13), will immediately make apparent any yardage which has not been accounted for.

Record for Rayon Mills

Similar records can be made in rayon mills shipping cloth in the gray. The data contained will be somewhat different than that in the report already described, but operation of the system will be similar. Information required in such cases is as follows: Col. 1, style numbers; Col. 2, yards of woven goods on hand, as of end of preceding period; Col. 3, yards woven during the period in question; Col. 4, total woven yards; Col. 5, yards shipped during period under investigation; Col. 6, theoretical yards on hand at the end of the period; Col. 7, actual yards on hand; Col. 8, production not accounted for; and Col. 9, shipments not accounted for.

Shortages brought to light by study of these records may be due to any one of several causes. For instance, cloth measuring machines may require adjustment or their operators may have become careless in their work. Again, cloth may be shipped but not invoiced, due to errors of shipping clerks.

Or, there may be loss due to thievery. Whatever the cause, detection of and guarding against such contingencies should reflect favorably on the mill's profit and loss sheet.

Cut-Fiber Takes Lead in Italy

Shorter synthetics exceed poundage of countinous filament—New varieties described

By RAFFAELE SANSONE
Genoa, Italy

ITALY is making rapid strides in substitution of synthetics for wool and cotton in the textile products usually made from those natural materials. The old-line textile manufacturers are being supplied with a range of cut fibers suitable for running upon their existing machinery.

This staple fiber development culminates a period of quick rise to importance by the Italian producers of synthetics. Their total synthetic fiber production has moved up in the following steps: 1920, 720 tons; 1928, 26,000 tons; 1934, 38,000 tons; 1936, 90,000 tons; 1938, a productive capacity of 120,000 tons. The 1936 figures are broken down to 40,000 tons of continuous filament rayon and 50,000 tons of rayon staple. It is thus apparent that the short-fiber material has gained the ascendency in the Italian market. This situation has been stimulated by limitations on importation of cotton and wool, and by governmental insistence that the synthetic fibers be substituted for the naturals in a wide range of textile manufacture. Exportation of the shorter fiber synthetics, also has risen to a volume which has surprised producers. This exportation has proved an aid in establishing foreign credits on which might be based present importations of the wool and cotton with which the synthetics may be mixed.

Italian manufacturers have been successful in developing their own domestic sources of cellulose, and they have used such materials as cornstalks, pine and other woods, hemp waste, rice straw, etc. The latest workable cellulose source is said to be marsh cane.

Three large groups comprise about 95% of the productive capacity and capital investment in the Italian rayon industry. These are Snia Viscosa, Cisa Viscosa, and Chatillon. Other smaller firms include Radioceta Italiana, Bemberg, Gerli, Orsi-Mangelli, and Parsio e Bolognesi. The sales of the rayon industry as a whole are controlled by a corporation known as Consorzio Produttori Italiana Rayon of Milan.

The types of rayon staple now available in Italy appear to be sufficiently varied to satisfy most needs. They may be short or long, shiny or dull, white or yellow, straight or curly. They may be waterproofed and made soil-resistant. The yarns made from them may have a wide variety of size and twist characteristics which adapt them to many uses. Products made from them range from fine light fabrics to carpets and shoe cloths.

Lanital flannel frock for beach wear made from 40 quarts of cow's milk

Snia Viscosa has been a pioneer in the development of short fibers and is today the largest manufacturer of these in the Italian market, offering both the fiber and yarns spun therefrom. This concern produces at least five different named staple fibers, of which Sniafiocco is by far the largest in quantity. Out of 50,000 tons of staple fiber produced in 1936, 38,000 tons were Sniafiocco. The 1938 production of this fiber is expected to top 50,000 tons. During the period of development of this fiber, cotton importation into Italy has been cut almost in half, dropping from 219,000 tons in 1933 to 110,000 in 1936.

Although Sniafiocco is handled in both cotton and wool mills, the manufacturers have produced two specialized types, particularly suitable for mixture with the two natural fibers. The first is known as Superlena, especially prepared for mixture with wool or use in wool-like materials. It comes in fiber lengths of 80, 100 and 120 millimeters, which are approximately 3 3/16, 3 15/16 and 4¾ in. The cotton type Sniafiocco is known as Bobol. This is offered in three lengths: 27 millimeters (about 1 in.), which may be used by itself or mixed with the shorter cotton; 32 millimeters (about 1¼ in.) which may be used in place of the longer American or Upper Egyptian cottons; 40 millimeters, (about 1 9/16 in.) which may be substituted for the longer staple cotton such as Sakellarides.

Snia Amba is a newly introduced staple fiber of unusual tensile strength, this being twice that of previous viscose staples. Its wet strength is about the same as the dry strength of the earlier type.

And finally in this family of short fiber synthetics comes Lanital. This casein fiber was patented on Aug. 3, 1935, and commercial production was started at Snia's Cesano Maderno plant in December, 1935. During the last two and one-half years there have been great strides in simplifying the production methods for Lanital and in improving its characteristics. It is being successfully used for coatings, sheer dress goods, hosiery, underwear, etc. Its softness is one of its attractive characteristics. Italy has been rapidly developing sources of casein, and several large plants have been erected.

To bear out the fact that Lanital is a close duplicate of natural wool, the following chemical analysis of each is offered:

	Lanital	Wool
Carbon	53.00	48.25
Hydrogen	7.00	7.57
Oxygen	23.00	23.66
Nitrogen	15.50	15.86
Sulphur	.70	3.66

Tests made by the Technical Institutes of Como and of Turin have indicated that fabrics made of mixtures of Lanital and wool have greater warmth than similar fabrics of 100% wool. Lanital is not susceptible to moth attacks and it is said that textiles made from it do not shrink. Wool materials feel warm to the body even when wet, a property not possessed by cotton; it is said that Lanital possesses this characteristic to an extent 50% more than natural wool. The strength of Lanital is said to be 80% of wool and its elasticity is superior.

Staple Cotton Fabrics

By JOHN HOYE

Fabric Technician with W. Harris Thurston, New York

This thirty-second installment of Mr. Hoye's series of articles on staple cotton fabrics which began in January, 1936, issue discusses dobby-woven drapery fabrics and commences the discussion of work-clothing fabrics.

Dobby-Woven Drapery Fabrics

DOBBY-WOVEN drapery fabrics are used by the drapery converting trade. They include wide range of small over-all woven designs which require up to 24 harness to weave. Although the designs change constantly, there are a few staple patterns, one of which is the chevron stripe. This pattern is a reverse-pointed twill or herringbone twill.

These drapery fabrics usually are woven 50 in. wide or wider, and are made of coarse carded yarns. Plied yarns often are used to give weight and strength. These fabrics usually are converted by piece dyeing with fast-to-light colors.

Iselin-Jefferson Co.

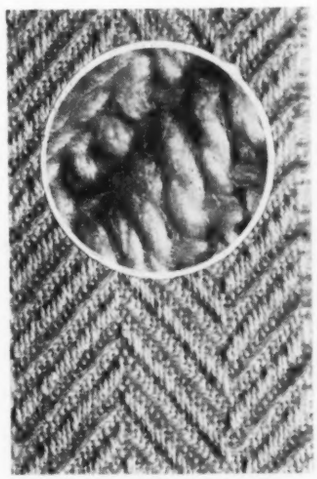


Fig. 1. Dobby-weave drapery fabric—chevron pattern, 52 in., 34x32, 1.22 yd., two-ply yarns.

Warp yarns: 8s to 20s single, 12/2 to 20/2 ply. *Filling yarns:* 8s to 20s single, 12/2 to 20/2 ply.

Examples of dobby-woven drapery fabrics:

52 in. 34x32 1.22 — 52 in. 46x40 1.62
56 in. 34x32 1.40 — 37½ in. 46x40 2.25

Work Clothing Fabrics

Work-clothing fabrics are those used for utility or work garments, such as overalls, service jackets, work shirts, trousers, shop caps, etc.; and are divided into two classes; viz., converted fabrics and mill-finished fabrics. Most are in the latter class.

Converted Fabrics

Converted fabrics are basic gray cloths, such as drills, jeans, twills, moleskins, etc., which have to be converted for use—usually by dyeing with either sulphur or vat dyes, or by resist printing with aniline black, in colors or patterns suitable for the work-garment trade. These converted fabrics usually are sold under the name of the basic gray cloth used, such as vat-dyed or sulphur-dyed jean or drill, etc. They are discussed in detail, in the September and October, 1936, and the January and March, 1937, issues of TEXTILE WORLD.

Mill-Finished Fabrics

Mill-finished fabrics are characterized by the fact that they always have colored yarns in them. They are made in solid colors, stripes, checks, and mottled or flecked effects. Among these fabrics are work-shirt chambrays and strong warp-faced fabrics, such as denim, hickory stripe, express stripe, pin stripe, covert, cottonade, and whipcord.

These fabrics need no converting, as they are finished, ready for use, by the mills that make them. After being woven, they usually are given a sizing treatment in order to impart the required finish, usually a firm finish. Dextrin, filling materials, softening agents, etc., are used. The amount of sizing varies, from 10% upwards, with different mills. However, it should not be excessive, because whatever finishing substances are in the fabric will be removed with the first washing of the made-up garments.

In order to insure the correct fit of the garment after it is washed, mill-finished fabrics generally are given a Sanforized finish. This finish shrinks the fabrics so that the residual shrinkage does not exceed a total of 1% in both the warp and the filling. Sanforized finished fabrics usually are softer than the regular mill-finished fabrics. Occasionally a cold-water shrinking process or some other method is used for pre-shrunk finish.

Cottonade

Cottonade is a 3-harness warp-faced twill, with the twill to the left. Usually cottonades are made with narrow black and dark gray warp stripe effects, or with a solid dark oxford gray color. The solid oxford cottonades are similar to whipcord, and have the appearance of worsted suitings. The lighter weight striped cottonades resemble striped coverts. Usually they are given a firm starched finish, and sometimes are napped slightly on the back to make them warmer and more bulky.

Warp yarns: 6s to 10s. *Filling yarns:* 6s to 12s.

Examples of cottonade:

30 in. 66x34 8.00 oz. per yd.
30 in. 68x34 2.40 yd. per lb.
36 in. 62x42 1.50 yd. per lb.
37 in. 62x34 1.60 yd. per lb.

(Note: Position of the captions beneath the illustration at the top and the illustration at the lower right-hand corner of page 64 of the June issue of TEXTILE WORLD should be exchanged in order to give a true description of the illustrations.—*Editor*)

Iselin-Jefferson Co.

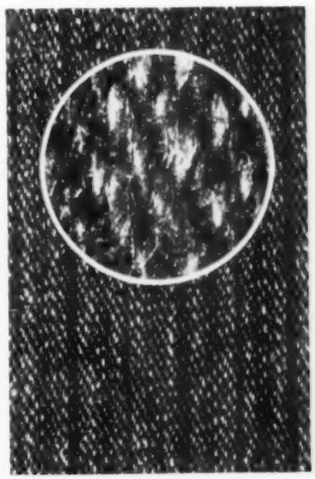


Fig. 2. Cottonade—30 in., 68x34, 2.40 yd. per lb.

Dyeing Hosiery Yarns

Applying sulphur colors to cotton, mercerized, and rayon

By W. H. HAND

AT the present time a large number of hosiery mills are doing in-grain dyeing and are dyeing yarn to be used in making stripes in half hose which is to be cross-dyed in contrasting colors. Various classes of dyes are being employed, such as sulphur, vat, napthol, and developed colors. This article will be confined to a discussion of sulphur dyeing on cotton, mercerized cotton, and rayon yarns.

One of the chief difficulties in the application of sulphur colors is that the dyes are likely to oxidize on the yarn, and thus cause streaks in the hosiery. This is particularly true of blues and greens. The yarn should not be exposed to air during dyeing.

Before the yarn is dyed, it should be scoured for 20 or 30 min. with penetrating oil and soap or soda ash. In some cases it may be well to add a small amount of sodium sulphide.

Before being added to the dyebath, the dye should be put into solution. It should not be dissolved in too small an amount of water; at least 2 gal. to 1 lb. of dye should be used. It is advisable to use ½ to 2 lb. of sodium sulphide to 1 lb. of dye, depending upon the particular dye used. The amount of soda ash used should be half as much as that of sodium sulphide. The soda ash and sodium sulphide are dissolved at a temperature near the boil; then the dye is added slowly. The dye should be dissolved thoroughly by stirring the solution constantly for several minutes, and the solution should be boiled about 10 min. before being added to the dyebath. With some dyes, it is necessary to add glue to the bath to retard the action of the dye.

Actual dyeing should be started at a temperature just below the boiling point for all colors except blue and green. For these, dyeing should be started at a temperature of 180° F., and not be allowed to go above this temperature. After dyeing for 20 to 30 min., salt is added, in the proportion of 5 lb. of salt to 1 lb. of dye, and dyeing is continued for 30 min.

After dyeing is complete, cold water should be run in from the bottom of the vat and the dye liquor flushed out at the top, in order to prevent oxidation streaks due to excess sodium sulphide. It is important to continue the inflow of cold water until all of the sodium sulphide is removed. Otherwise, the yarn will be harsh and brittle. If the shade needs brightening, the yarn should be treated with 1 to 2% sodiumperborate for 15 min. at 130° F. After the cold rinse, the yarn should be given a boiling soap rinse, and then treated with a softener at a temperature of 120° F.

Dyeings made with some sulphur dyes are improved in fastness to washing and light by aftertreatment of the yarn with a warm solution containing 1½% sodium bichromate, 1½% copper sulphate, and 3% acetic acid.

What Holds the Shuttle?

Mr. Moberg replies to a critic

IN THE December, 1937, issue of Textile World, Melvin R. Williams, Pennsylvania, wrote a comment on my article "What Holds the Shuttle?" published in the July, 1936 issue. My statement was to the effect that a shuttle in a loom is held against the reed by a lateral influence of the backward movement of the lay, as well as by the force of gravity. Mr. Williams stated that the backward movement of the lay has a tendency to leave the shuttle behind, due to the inertia of the shuttle. The latter statement, I believe, is incorrect.

Inertia—which is the resistance that a body offers to motion when in repose, or the resistance that a body offers to acceleration or deceleration when in motion—can hardly have any effect in this case. The inertia of a shuttle to a lateral movement has already been overcome at the time of the pick; this takes place at the forward position of the lay, and the effect diminishes toward top center, where the lay attains its highest speed during the backward movement. As the lay moves from top center to back center with gradually decreasing speed, inertia of the shuttle changes into another force, momentum. The shuttle has its greatest lateral speed at the pick, and, as its lateral movement is gradually stopped by the decreasing speed of the lay, the shuttle will be forced against the reed.

As a better illustration, suppose that a shuttle were confined in a groove in the lay, slightly wider than the shuttle, itself. From front center to top center, the shuttle would be forced against the front wall of the groove as the backward movement of the lay increased in velocity. This is due to inertia. From top center to back center, the velocity of the lay decreases, and the shuttle would be forced against the back wall of the groove. This is due to momentum. It should be understood that from front center to top center the movement of the lay would have a tendency to leave the shuttle behind as the speed increases, but from top center to back center the lateral movement of the shuttle would have a tendency to leave the lay behind as the latter's speed is slowed down.

On some looms the force of gravity is very small since the raceplate is almost level at the pick. It is mostly the lateral momentum that forces the shuttle to hug the reed.

If the lay were stationary on back center at the picks, as Mr. Williams states, there would be only one force that would keep the shuttle against the reed; namely, the force of gravity. It is doubtful whether this force would be sufficient to keep the shuttle in looms with only a slight slant to the raceplate.

Mr. Williams stated also that the picker rod should be adjusted to throw the shuttle against the reed slightly. Refer to Fig. C3 in Chapter I of Loomfixer's Manual published in the August, 1937, Textile World. Actually, the box back should be lined up to throw the shuttle onto the reed, since the shuttle will follow the pitch of the box back. The picker rod should be adjusted to move parallel to the box back. Of course, theoretically, a slight pitch of the box back toward the reed line should cause the shuttle to hug the reed more firmly. However, the pitch should not be excessive, as it would tend to cause the shuttle to ricochet off the reed, and also, to have its velocity reduced by undue friction against the reed. Incidentally, most mills are running their looms well with the box back in straight alignment with the reed, thus depending upon the lateral momentum and the force of gravity to keep the shuttle against the reed. IVAR MOBERG

Cotton Fabric Defects

Revealed by the microscope

By WALTER G. KRAMER
Carl Zeiss, Inc.

AMONG the various applications of practical microscopy in the cotton mill, one of the most valuable is its use in determining the causes of defects in yarns or fabrics. Obviously the textile technician cannot expect to embark successfully on making practical tests without any practice in the technique of using the microscope. However, after he has acquired a little experience in handling the apparatus and has familiarized himself with the appearance of normal samples of the textiles at various stages of manufacture, he is in a position to discover the cause of such defects as may appear.

The accompanying illustrations show the way in which microscopic examinations reveal the differences between normal and defective fibers, yarns, and fabrics. Such examinations frequently suggest how an operation can better be controlled, or modified, to prevent a recurrence of the fault. Many people who set out to make serious use of microscopy as a method of control make the fundamental mistake of choosing apparatus of much too complicated a character, with much too high a magnification and resolving power. In the great majority of cases the textile microscopist does not need any higher magnification than 200 to 300x. It is very important to make sure that the apparatus will also provide a low magnification of 3 or 5x for general examination purposes.

Fig. 1 shows the appearance through a low-power illuminating magnifier of a sample of cotton muslin with a nep of dead or unripe cotton. Fig. 2 shows the difference between dead and normal cotton fiber as disclosed under transmitted light by a standard compound microscope; the dead fibers appear as deformed

Fig. 5. (500×) Abnormal structure of deformed fiber, frequently encountered in the lower qualities of cotton

Fig. 3. (500×) Three normal cotton fibers photographed through the microscope by transmitted light

Fig. 4. (500×) The spiral structure of the lamellar wall of the normal cotton fiber is shown by insertion of a deep, blue-green filter and use of a condenser with a numerical aperture of 1.4

Fig. 1. (4×) Nep of "dead" or unripe cotton in muslin. As this dead cotton will not dye with the usual cotton dyes, such neps impair the appearance of the fabric

Fig. 2. (180×) Upon examination of the raw stock under transmitted light with a standard compound microscope, the dead or unripe cotton fibers appear as broad deformed strips, as compared with the twisted normal fibers

Fig. 6. (475×) Normal cotton fiber taken by polarized light. For this is required either a Nicol prism, polarizer and analyzer, and a selinite plate, or the recently developed Bernauer polarizing filters

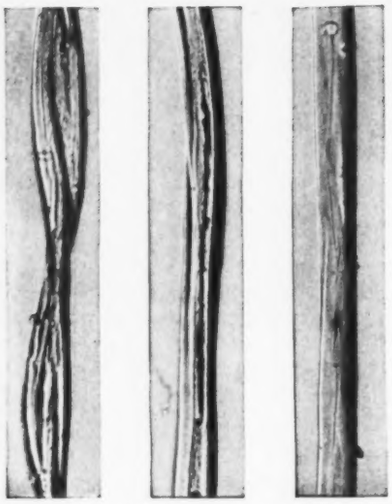


Fig. 7. (300×) Photomicrographs showing changes in appearance of cotton fiber upon mercerization with 30° Bé. caustic soda. Left, raw cotton fiber; center, commencement of mercerization; right, well-mercerized cotton fiber; see also Figs. 12 and 13.

Fig. 8. (430×) Presence of oxycellulose can be detected by presence of small crystals on fibers which have been treated with Fehling's reagent

strips, as compared with the normal twisted fibers.

It is particularly important for the practical worker to acquire a thorough understanding of the diverse illumination conditions used in microscopy. The standard illumination for microscopy is what is known as transmitted light. The correct light source for simple, straightforward microscopy is a north window. This should be free from cross-bars, or at least should have large panes. Fig. 3 is a photomicrograph of normal cotton made by transmitted light. Insertion of a deep blue-green filter and the use of a condenser reveals the spiral structure of the lamellar wall, as shown in Fig. 4.

A method which is of importance in the examination of fibrous materials is that of microscopy with polarized light. Fig. 6 shows the effect of polarized light on an individual cotton fiber.

The defects, which arise from incomplete and irregular mercerization, can be easily tracked down by microscopic examination in conjunction with micro-chemical color reactions; Fig. 7 is a photomicrograph of an individual cotton fiber showing the changes which occur in the mercerizing process.

Excessive bleaching converts cotton into oxycellulose. This change can be detected by micro-chemical methods, using Fehling's reagent. Oxycellulose reduces the reagent with the formation of small micro-crystals, which in transmitted light under the microscope can be seen as crystals of a more or less pronounced cubic shape upon the fibers, as shown in Fig. 8. Hydrocellulose reduces Fehling's reagent to the same crystals, but usually on a much smaller scale.

The effect of acid followed by heat is a cleaving and splitting of the damaged cotton, as can be seen in Fig. 9, which is a photomicrograph taken by oblique illumination with transmitted light.

Fig. 11. (200×) Cross-section of 4-ply cotton yarn, showing sizing uniformly distributed section.

A simple method to determine whether a defect in cotton goods is of a chemical or mechanical nature is to apply a swelling test with caustic soda solution. In Fig. 10 individual fibers taken from a damaged fabric and treated with 19° Bé. caustic soda show under the microscope, at the ends which project into the fabric, the puffed-up protrusion characteristic of sound cotton, while the cut ends of the same fibers from the neighborhood of the hole do not exhibit this effect, indicating chemical damage.

Another question which is of interest to the weaver is the uniformity and degree of penetration of the sizing into the cotton fibers. Fig. 11 shows a general view, under a medium magnification, of the cross-section of a 4-cord cotton yarn, the sizing of which, dyed deep blue by iodine-potassium iodide solution, can be seen to be uniformly distributed around the fibers.

The shape of the cross-section of cotton fibers often gives valuable information as to its chemical treatment, especially in regard to the degree of mercerization. Fig. 12 shows

Fig. 9. (120×) Cleavage resulting from action of acid and heat on cotton; photomicrograph taken by oblique illumination with transmitted light

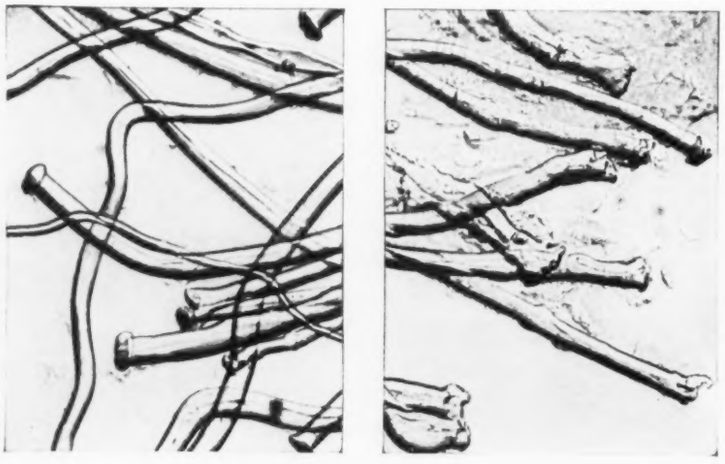


Fig. 10. (120×) Swelling reaction with 19° Bé. caustic soda. Left, undamaged cotton; right, chemical damage due to acid spray

Fig. 12. (620×) Cross-section of Sakellarides cotton fibers before mercerizing

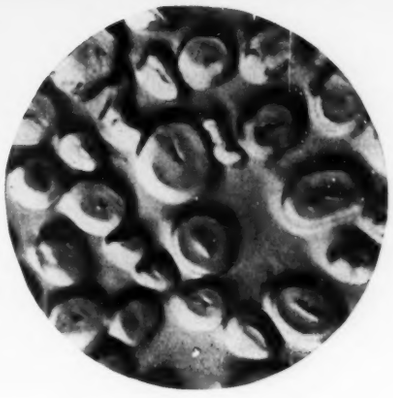


Fig. 13. (620×) Cross-section of high-gloss well-mercerized Sak cotton

a magnified cross-section of raw native Sakellarides cotton. Fig. 13 shows, by way of contrast, a high-gloss, well-mercerized cotton fiber.

While ordinarily textile fibers are observed in a drop of water, covered over with a cover glass, it is advisable for the observation of pieces of fabric to mount them in Canada balsam, which has a higher refractive index. The result is that the tissue as a whole becomes more transparent, and the impurities in or upon the fabric become more easily visible. Fig. 14 shows the remains of a seed pod in a cotton fabric mounted in Canada balsam.

Fig. 15 shows a case of bacteria in cotton fiber in transmitted bright-field illumination, while Fig. 16 shows a pure culture of mold fungus from cotton yarn by dark-field illumination, using a special dark-field condenser for medium magnifications, which is inserted in place of the ordinary microscope condenser.

It is often advantageous to light the samples from above. This is termed incident or Epi-illumination, and is employed more particularly when examining surface fibers. Fig. 17 shows a cotton fabric photographed by Epi-illumination before and after application of a surface finish. Again, for many fabric investigations, instead of the uni- or bilateral incident illumination provided by the Epi-lamps, it is more satisfactory to employ a general incident illumination from all directions, which presents a uniform picture of the structure.

Fig. 18 is a photograph of a surface-damaged fabric taken by means of an Epi-condenser.

Finally it should be mentioned that it is often desirable—and may be necessary—to photograph the enlarged image seen in the magnifier or microscope. When the textile technician acquires experience in the science of microscopy, he undoubtedly will want to branch out into the allied field of photomicroscopy.

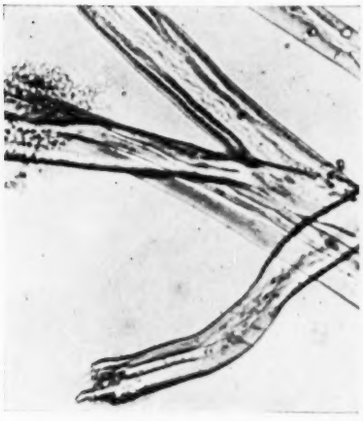


Fig. 15. (200×) Bacteria attacking cotton fiber as shown by transmitted bright-field illumination

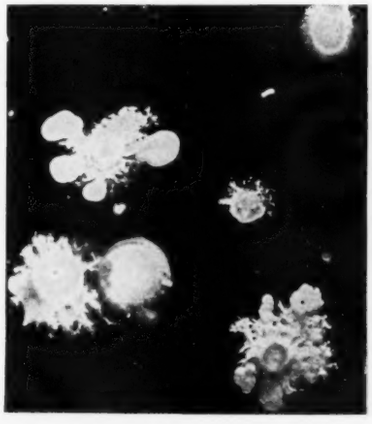


Fig. 16. (3×) Pure culture of colony of bacteria from cotton yarn as shown by dark-field illumination

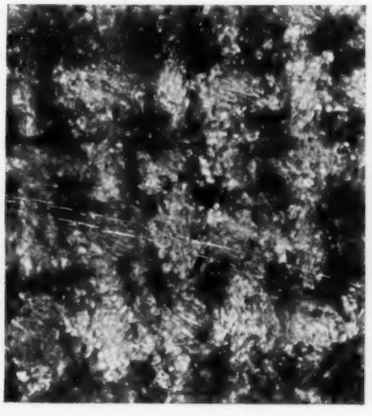


Fig. 17. (20×) Cotton fabric photographed by Epi-illumination before and after application of a surface finish

Fig. 14. (15×) Remains of seed pods in cotton fabric shown in specimen mounted with Canada balsam in a Lasse special object slide

Fig. 18. (23×) Surface- damaged cotton fabric photographed by light from an Epi-condenser

Fiber Characteristics

As disclosed by use of proper microscopic mounting media

By WM. M. GROSVENOR, JR.

PROPER relation between optical properties of mounting media and textile fibers is of great advantage in microscopic analysis and examination. A medium entirely satisfactory for observing certain characteristics may be wholly unsuited to other observations. All fibers shown in Figs. 1 to 7 were photographed at 300-diameter magnifications; the fabric illustrated in Fig 8, at 12.5 diameters. Examination of the illustrations will make readily apparent the advantages, in certain cases, of one medium over another in bringing clearly into view various characteristics of particular fibers.

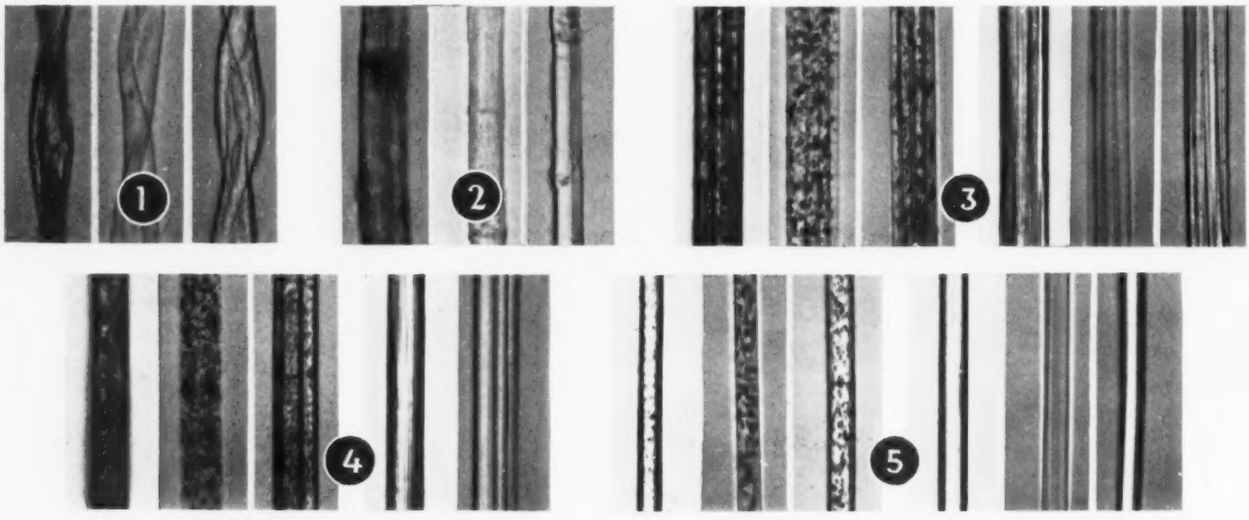
In the case of the rayon fibers, for instance, it will be noted that the monobromnaphthalene mounting accentuates the striations in the bright fibers and the pigmentation in the dull fibers, as well as giving more clarity to fiber edges of both types of specimens. The bright acetate mounted in mineral oil has been omitted because the photomicrograph shows practically nothing, due to a coincidence of refractive indices.

The second of the two wool fibers shown was mounted in a 50-50 mixture of clove oil and collodion, with the fiber half submerged in the mounting medium. The purpose was to make invisible the scales on the lower side of the fiber and thus present more clearly the scales on the face. Comparison of the two views will make plain the efficiency for scale examination of this type of mount. However, for measurements of fiber diameter, mineral oil is more satisfactory.

Polarized light in conjunction with various media is a useful instrument for the identification of normal fibers, and of processed fibers such as derive from anti-crease and other treatments. Infra-red photography, and the fluorescence induced by ultra-violet illumination also may aid in analysis. In addition, ultra-violet also makes possible the location and identification of oil and other spots not distinguishable by ordinary visual or microscopic inspection.

In identifying individual fibers in mixed textiles, use of proper mounting media is particularly important. In one method the samples under inspection are mounted in a medium having a refractive index identical to that of one of the component fibers. In Fig. 8 are shown two views of a fabric having adjacent acetate and silk stripes. It will be noted that mounting in lemon oil, which has the same refractive index as acetate rayon, renders the acetate fibers invisible.

Abstract of an illustrated address delivered before the American Association of Textile Technologists. Mr. Grosvenor is vice-president of Wm. M. Grosvenor Laboratories, Inc.



Fibers mounted in air, mineral oil, and monobromnaphthalene. Fig. 1, cotton; Fig. 2, linen; Fig. 3, left, dull viscose; right, bright viscose; Fig. 4, left, dull acetate; right, bright acetate (oil mount omitted—see text); Fig. 5, left, dull cuprammonium; right, bright cuprammonium

Fig. 6, Wool fibers mounted in air, and half imbedded in collodion mixture; Fig. 7, Silk, in air, water, mineral oil, and monobromnaphthalene

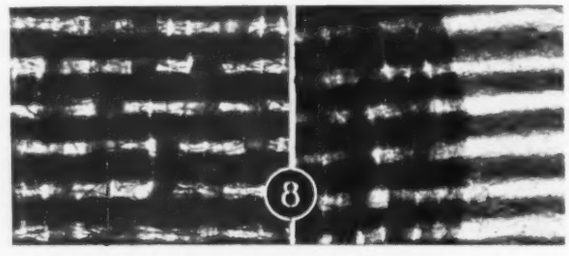
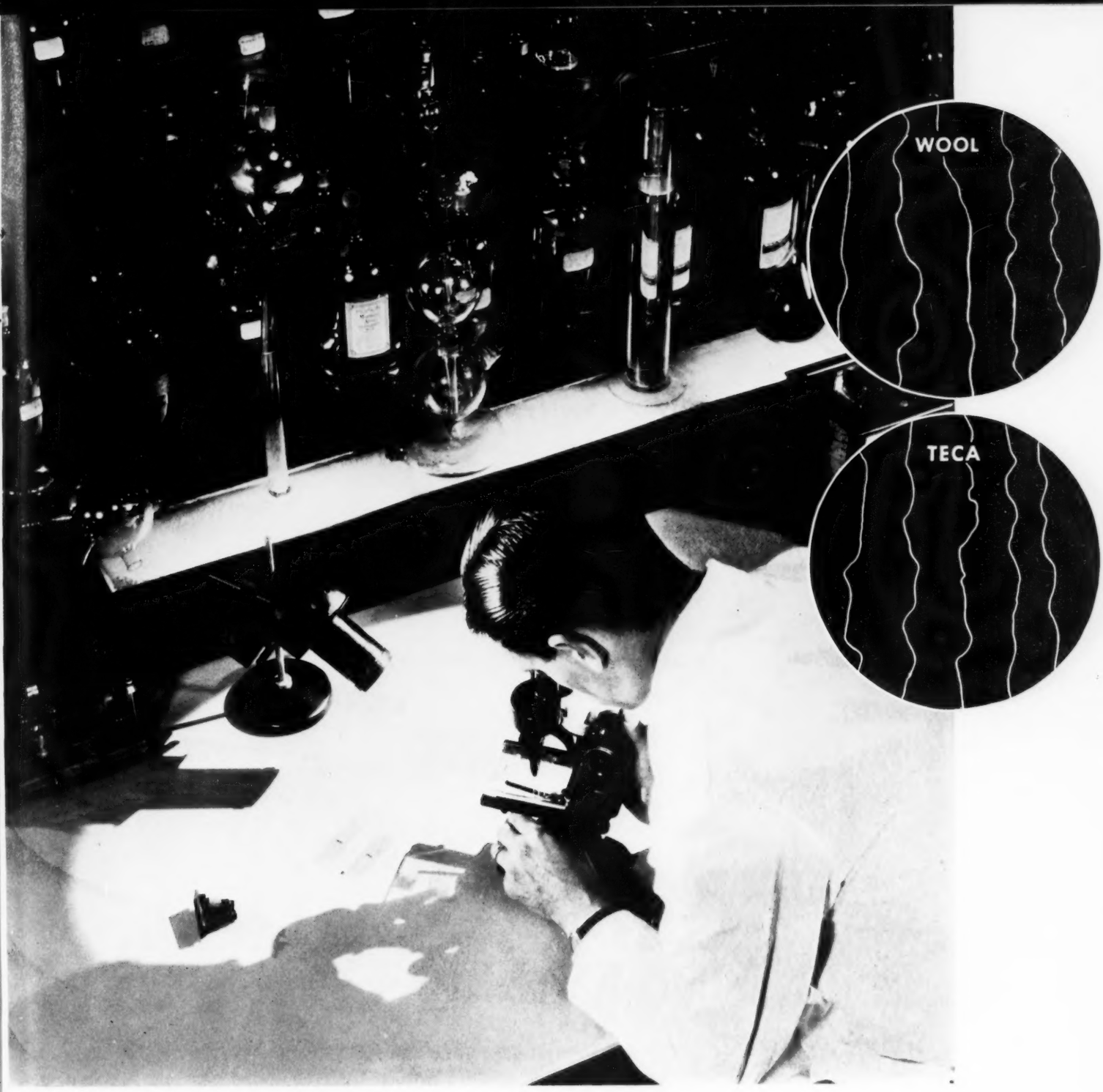


Fig. 8, Fabric having silk and acetate striped warp, mercerized cotton filling; left half mounted in monobromnaphthalene, right half in lemon oil



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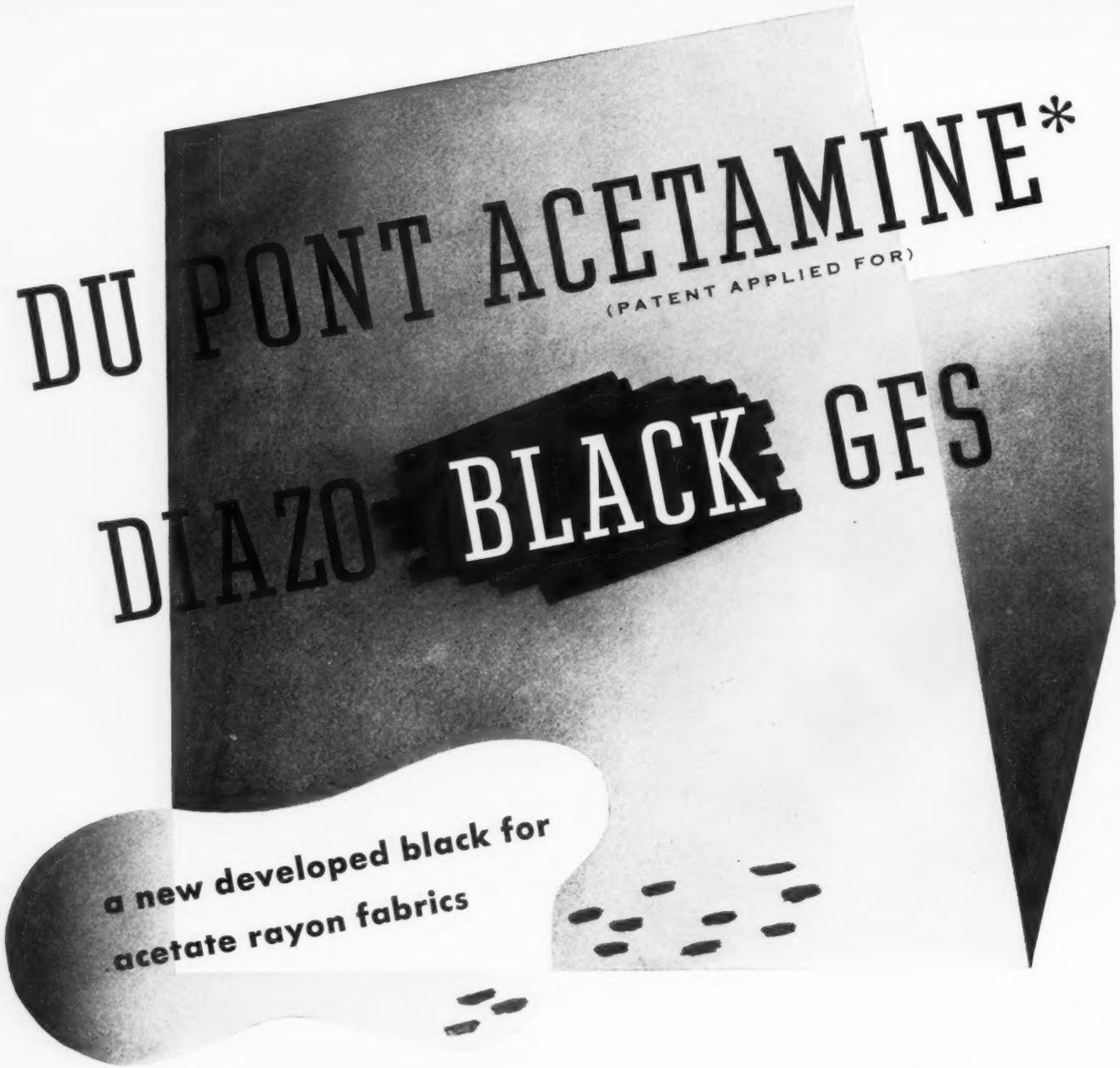
Eastman Acetate Rayon



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The working properties of Acetamine Diazo Black GFS are satisfactory throughout and the use of soap in dyeing is recommended. It possesses very good affinity at 160° F., absorbing rapidly from the dyebath, and is, therefore, applicable to plushes and similar materials requiring low dyeing temperatures. It is likewise suitable for the dyeing of all types of acetate fiber yarns and pieces, including taffetas, linings, satins, chiffons and acetate-rayon mixtures. Its fastness compares favorably with that of the other dispersed Acetamine Diazo Blacks. Careful control during manufacture assures the maintenance of consistently uniform quality.

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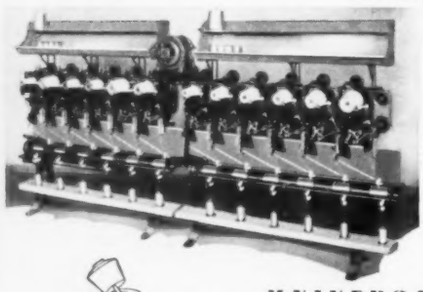

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THE OVERSEERS' CORNER

Scouts in Other Mills

BILL chanced in to Pete's office one day, to find the latter wearing a long doleful face.

"What's the matter, Pete?" he asked in his usual gruff manner.

"It's that piece of work I've been trying to produce," replied Pete. "We've had a big order on hand for some time and I can't seem to get started. The buyer won't O. K. the sample, and keeps yelling that if we can't make it our competitor can."

"Maybe it's not your fault," suggested Bill. "There are other departments before yours in the mill."

"I thought of that," said Pete, "but there is nothing wrong with the stock when it gets to me. I'm just stuck because of my own limitations."

"That should be easy then," said Bill turning to leave. "Just send one of your boys over to the competitor's mill and let him work a few days. He should be able to find out how to do the job in no time."

"What do you mean, send one of my boys over there?" exclaimed Pete. "I wouldn't think of it! It's not ethical."

"Well, it's been done before," growled Bill with the suspicion of a twinkle in his eye. "Seems to me we discovered one of their men in our plant not so long ago. All's fair in war and the textile business, you know."

"I don't care what they do," emphatically asserted Pete rising to his feet. "I'm not going to stoop to such practices."

"Ethics are ethics, Pete, but for all of my years I haven't let my ethics keep me from sending out a scout to other mills when I got in a tight spot.

"I hope the boss will understand your noble attitude if we fall down on the order," concluded Bill, mumbling something to himself as he left the office.

What do you think about sending scouts to other mills?

Letters from Readers

Keeping Ability Records

Editor, Overseers' Corner:

Unquestionably, any one who has supervision over others should keep systematic work and ability records of his subordinates. If not, any statements to be made concerning an employee are left to chance, or perhaps biased by the vivid memory of some outstanding contact with him, unless backed by a written record, as we all slip now and then. While the five points enumerated are sufficient for the purpose, I have gone a little more into detail by analyzing employees as follows: (a) work—quality and quantity, (b) supervision required, (c) resourcefulness, (d) attitude toward the company, (e) versatility, (f) judgment, and (g) personality. After grading the employee on each of the above items, the average gives his rating. Supplementary to this are his records of mistakes, reprimands, attendance, tardiness, etc. Of course, the above will not always apply under the new labor laws, as we must now consider collective bargaining, unions, seniority, etc. Yet I firmly believe in unbiased records of the help, as it is only fair to them and helps me.

Z. E. SARGISSON
(*Akron, Ohio*)

How It Feels to Receive a Pay Increase

Editor, Overseers' Corner:

I once was a section hand and I worked for every cent I earned, and I don't mean maybe. I prided myself in keeping my department neat and machinery in the best condition, and my workers were well pleased with me. My overseer was also satisfied with my work until the superintendent took notice of me. Then he was sure that I was the right man for the job. One day, the overseer and superintendent were talking together about 50 ft. from where I was working. I noticed that they were talking about me more or less. A few minutes later my overseer called me. He said, "Johnnie, the superintendent has something to tell you." Believe me, I was all excited because I didn't know what was in store for me. Finally, the superintendent said, "Well, Johnnie, we have been following your steps, and are very well pleased with the way you handle your department. Starting Monday, you will receive a 10% raise and when the mill runs slack I want you to come in just the same and do whatever is necessary to be done in your department." Now take it from me my friends, I felt as if I had won the first prize in the Irish Sweepstakes. As a result of this experience, I believe it is the duty of every section hand or second hand to do his best in his department so that his superiors will have confidence in him and increase his pay. I always like to write items referring to section hands and overseers because the section hand is the overseer's right hand.

J. C.
(*Rhode Island*)

Overworked Words

Editor, Overseers' Corner:

During my school days I once heard an English teacher casually make the statement, "A person is as big as his vocabulary." This statement I rather discounted at that time, but the older I get the more visible the truth becomes in this statement. We in supervisory capacities are too prone to set up a practice that is cut and dried, very routine, and our speech drifts along one channel with little change. One organization I know very well works the word "cooperation" to death. Everyone in the organization talks cooperation, from the sweepers up. There is a good set of working people there, but the word has been overworked, and no longer means anything. Still another overworks the phrase, "get the point?" Another abuses "check", and another

CONTRIBUTIONS to "The Overseers' Corner" are paid for without regard to length. We will use letters discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute kinks or practical helps will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. If these pages interest you — contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42d St., New York.

THE OVERSEERS' CORNER

"alibi." Anyone with common intelligence who does any thinking "gets the point" if a matter is explained in a concise clear manner. "Check" may be a good word to use, but personally I try to refrain from using it as it means just as little as any word I know if used in verbal form. Other words or synonyms fit most cases better. To be specific, there is only one definition for the word "alibi" It is a law term, "A sworn testimony or plea by a defendant in court of being elsewhere at the time when a crime was committed." Good authoritative dictionaries also include with this "an incorrect substitute for excuse."

In conclusion, I emphasize that it would not hurt any overseer to develop his vocabulary along with his technical ability.

LAMAR FOGEL
(South Carolina)

Ability Records Advisable

It seems to me that "Systematic Work and Ability Records" are advisable for each employee because they give a permanent record of accomplishment which no overseer's memory can compete with. They are invaluable for reference, length of employment, spoiled work, raises or promotions, accidents, cleanliness of machines, and many other things. They provide a means of grading all workers and help to eliminate favoritism and nepotism. The fact that the people know that records are kept regarding progress, ability, etc., tends toward a much better morale. Further, a set of records of this nature is just about a "must" now; what with social security, wages and hours legislation, and many other factors that bear on the worker's job. The time has passed when an overseer can keep everything in his head. A wise one will either have a set of records or start one as soon as possible.

J. MURPHY
(Ohio)

Employing Relatives

Editor, Overseers' Corner:

H. G. Clarke's letter, in the April issue, was most interesting. But he failed to do justice to his subject, in my opinion, for he didn't cover all the ground the matter he wrote about embraces.

Personally, I've had experience working under a relative. At the tender age of 12, I went to work for an uncle, taking a sweeping job in the spinning room of which he was overseer. As I happen to know very well, there are two extremes connected with working for one's relatives: they either show you too much undue consideration, or, in an effort to show the other "hands" that no discrimination is made in your favor, try to work you to death.

My experience was in the latter class. No matter how much work I accomplished, how hard I strived to please, there was always something wrong; my uncle-overseer was never satisfied and I caught it coming and going all the time.

Such was my experience working for a relative. On the other hand, I've seen it happen much the same as Mr. Clarke outlined. Contrary to what happened in the case of my uncle and myself, I've worked in plants with relatives of the overseer and have been taken off my job and made to help them catch up theirs after they'd allowed it to run behind, observing that no reprimand was handed out to them by their kinfolk boss.

Whether an overseer can run his department successfully while employing relatives is a question. In plants where general discipline is lax, one might get by; in those where it's very rigid one probably would not. It seems to me that it would be better for both the overseer and his relatives if the latter worked for someone else.—J. R.

(North Carolina)

Overseers Practical Helps

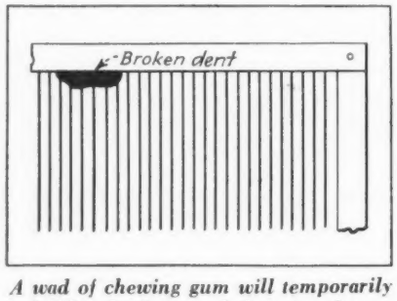
Saving Chain Links on Full-Fashioned Hosiery Machines

In these days of many style changes on full-fashioned hosiery machines, a few minutes saved is beneficial to fixers who must make these changes. On most occasions chain links must be taken out or added, according to the requirements for the new style set-up. It is quite common to have all the spare chain lengths in a bin built for this purpose. When a fixer wishes to add some links to a chain, he must search through the large pile of chain in the bin, which seems to contain every length but that which is desired. Almost invariably, he ends up by cutting off from a long piece of chain the number of links he needs at the moment. This practice will ruin many links of chain, over a period of time, and chain is quite expensive. A simple, efficient method of overcoming this is to drive sets of two nails each into the wall of the machine shop, just far enough apart to permit chains of various lengths to be slipped over them easily. Enough nails may be inserted to take care of individual pieces of chain containing from two links on up; 5-in. nails are recommended, as this length will allow at least a half dozen pieces of the same length to be kept in place. Above each section a numeral is placed, specifying the number of links that the pieces of chain in that section contain. It is at once apparent that when the fixer needs a certain number of links, all he needs to do is reach for them. It is surprising the amount of time and energy this convenient lay-out will serve.

K. R. BARKER
Tennessee

Temporary Dent Repair With Chewing Gum

Here is a temporary repair for broken reed dents that you may laugh at; nevertheless, it is one of the quickest repairs to make and will last for several warps in the event the twisting department overlooks repairing of the reed on the remount. If the dent is broken completely off along either top or bottom, a small piece of chewing gum about the size of a pea is worked into the dents as close as possible to the reed-space spring, so the gum will be along the back as well as the front of the reed. The sketch shows position of the gum at the top of



A wad of chewing gum will temporarily hold a broken reed dent in place

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the reed. When worked into place, it must be tacky; as the gum hardens, the broken dent is held firmly in place. It is not necessary to leave a loom idle for a shift or more merely because of a broken dent to be repaired, providing the fixer understands this kink.

O. L. F.
Pennsylvania

Indirect Heating of Dyebath

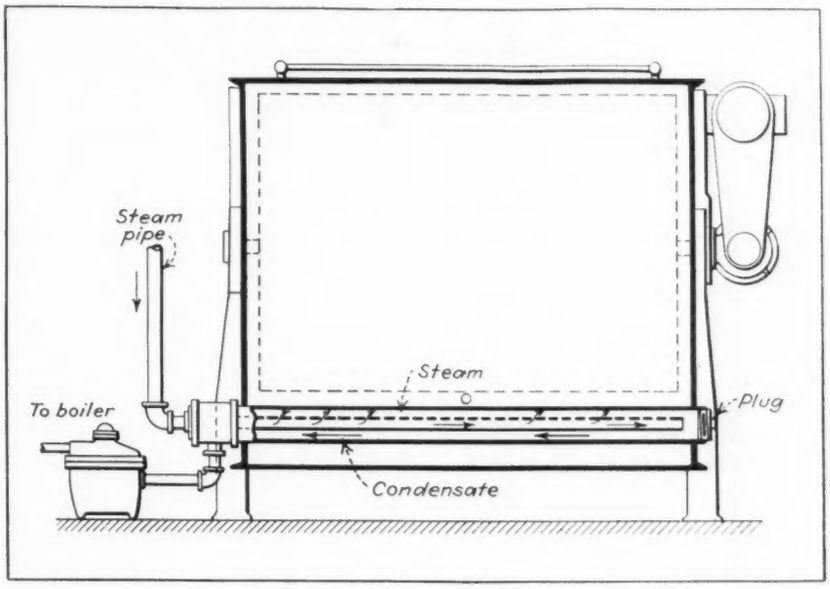
Notwithstanding the fact that hosiery-dyeing machines have been wonderfully improved during the last fifteen years, the method of bringing the dyebath up to the proper temperature in many cases is the same as it was a score of years ago. A common arrangement for heating the bath is by direct contact with live steam. This is accomplished by extending a perforated portion of the steam pipe across the bottom of the dye kettle. While this method is the simplest and has high thermal efficiency, it introduces certain evils.

Among the faults of an open pipe is the dilution of the dye liquor by steam condensation. This is particularly noticeable when dyeing light shades, such as delicate tints on women's hosiery. Another bad feature is tangling of the goods, due to violent agitation of the liquid when the steam is turned on. The perforated heating pipe frequently becomes clogged with frayed fibers from the dye nets and from the sediment that accumulates at the bottom of the kettle.

To overcome such disadvantages, our dyer devised a means of heating the liquid indirectly by means of a closed steam pipe. The accompanying illustration shows the simplicity of the device. Any pipefitter or handyman can make one which can be applied to almost any modern dyeing machine.

Referring to the illustration, it can be seen that the perforated pipe is enclosed by a larger pipe. This pipe extends through the kettle and is closed at one end by a plug. At the other end it is connected to a reducing tee through which the supply steam pipe enters. A small pipe leads to the steam-trap tee, which returns the condensate to the boiler.

When the steam has transferred its heat to the liquid through the larger pipe, the water of condensation drains to the trap and is returned to the boiler while it is hot. The steam cannot come in direct contact with the dye liquor; hence there can be no dilution or contamination. And, since the condensate is hot distilled water which is automatically returned to the boiler, it is quickly evaporated into steam again. This tends to keep the boiler pressure more uniform.



Cross-section of hosiery dyeing machine showing method of heating liquid indirectly

The more condensate from process steam that can be automatically returned to the boiler, the more uniform the water level can be kept in the boiler and the less time the fireman has to spend watching it. This device saves the fireman a lot of work shoveling coal and saves the company a lot of fuel.

J. W. H.
Burlington, N. C.

Making Fancy Yarns

The spasmodic requirements of the woolen and worsted fancy-yarn trade add considerably to the cost of such yarns. Fancy-yarn machines, productive when in use, are often standing idle—which makes overhead charges very high. When possible, such yarns should be made on ordinary machines, such as spinning, twisting, and roving frames. For example, rovers can be used as fancy frames for making loop yarns. The change required is not a violent one, and a few rovers can often be spared for this purpose. Certain fly frames are readily converted into nop-yarn frames: the back roller becomes the intermittent roller by use of spaced wheels.

One of the neatest arrangements I have ever seen is for the production of spiral yarns. The frame modified and used is the ordinary dolly roller twister, and the modification takes the form of a double-tier dolly roller. The bottom half is 2½ in. in diameter, and the top half is 1¾ or 2 in. in diameter, allowing excess deliveries of 16 and 33%. F guides are necessary to direct the threads: these can be procured from any spindle accessories supplier. Yarns should be under complete control of their respective dolly rollers. Good leathers, not "splits," should be used.

A large variety of fancy yarns can be made by twisting together threads of unequal diameter, twist, and twist direction. It is also surprising what can be achieved by folding yarns of different pliabilities, such as mohair and short fine wool or luster wool and camel's hair. In addition, there is a great field for the blender of slubbings of botany wool, rayon, tussah silk, and camel's hair.

GEORGE HENDRICKS
Bradford, England

Sinkers and Verge-Plates

Mr. C. O. Simms, in his article in the April, 1937 TEXTILE WORLD, stated "Too much space at this point (play in sinkers between verge plate and jack) causes the sinkers to move sluggishly and permits them to slip back, some further than others, producing hose with extremely tight and loose stripes." This does not appear to be correct; if the sinkers move

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sluggishly, it is because they are bent, burred, or improperly lubricated. These sluggish sinkers are ones which probably do not slip back because they are hard to move. As stated in my letter of November, 1937, tight lines may be caused by stiff sinkers or jacks which come short of their full stroke; rather than by sluggish movement, as stated by Mr. Simms. Whichever is correct, the damage occurs in the clearance back of the verge-plate, which may be 0.006 in. or less, depending on the gage of the machine. Stiff jacks or sinkers are rare; most tight lines are caused by worn jacks or sinkers. Both, however, should be replaced.

Twenty-five or more years ago the best of fixers and finishers filed and packed needle-bar hinges and then plied the needles to the gage. I think it just as well to divide the error at the yarn-drawing level of the needles, and then ply to gage. Errors in alignment of needle-bars are probably caused by the warping of the bars after they are made. A bad bar can be straightened by the builders. Heat treatment of castings is a comparatively recent preventive of this trouble.

Since the machine builders do a perfect regrinding job on verge-plates very inexpensively, it seems like a waste of time for an expert workman to try to do a passable job with a file; besides, a filing jig has to be hardened to stand up to the job even for a short time.

WALTER A. SIMOND
New Hampshire

Questions and Answers

Rayon Warp Sizing

Technical Editor:

I shall appreciate it if you will answer the following questions about the slashing of viscose and semi-dull rayon yarns (1) What can be done in the slashing to prevent streaky warps? (2) What temperatures are best, with running speed of 26 to 30 yd. per min.? (8453)

If what is meant by "streaky warps" is the effect caused by light and dark ends in the warp of the fabric after dyeing, the fault is caused by variation in tension on the ends across the warp. Variation in tension is usually the result of improper warping of the section beams in the cotton system or the warp beam in the silk system.

We assume that question No. 2 relates to temperatures on the drying cylinders. Our thought is that the only safe course is to use the various quick tests, which are well known to slasher foremen, to determine how much stretch still remains in the yarn when sample ends are taken from the warp, between the time it leaves the last drying cylinder and when it goes on the loom beam. The sized end should be compared with an unsized end from the section beam off which the yarn is running. Another check is also necessary; the workman running the slasher should observe the feel of the yarn coming off the last drying cylinder and be accustomed to judge when excess moisture is in the yarn. We also suggest careful observation of the amount of steam being driven out of the warp by heat from the drying cylinders.

Cotton Shoddy Picking

Technical Editor:

I am using all cotton clippings and putting them through a rag picker, making shoddy which is being used for stuffing purposes. I am getting a stringy, lumpy shoddy, which the trade does not like. Any information you can furnish me on this will be appreciated. (8520)

There are two types of rag pickers in general use for reclaiming rags either for reuse as fiber, or for use as stuffings for mattresses, etc. They are the cotton waste picker and the shoddy waste picker.

The first type has anywhere from one to five beaters (down stroke) and the other type is generally a single-beater type (up stroke). The first type shreds the stock by having the stock held by feed rolls or feed roll and plate. The second type shreds the stock by having the stock wrap around the feel roll, and, as the roll increases in size, the stock is ground to shreds.

To make either type of these machines shred the stock more, several adjustments can be made. These adjustments, either individually or as a whole, should improve the condition which you are encountering. First, set the beater closer to the feed-rolls. Second, decrease the feed-roll speed without decreasing the beater speed, or increase the beater speed without increasing the feed-roll speed. Third, if a cotton waste picker is used, either increase the number of beaters (for this particular job four to five beaters is most practical); or use feed plates on the last beater, or the last two beaters if more than three beaters are in use. Fourth, possibly the pins are bent and should be straightened. Fifth, if the lagging and pins are in bad shape, they should be reconditioned or replaced. Sixth, possibly stock is following around beater, or licking or hanging to beater, and the doffing plate or the cut-off plate should be set closer to the beater. Seventh, the pins should be finer on the last two beaters, providing the cotton type of picker with three or more beaters is used.

Cotton-Warp Worsted

Technical Editor:

Inclosed are two small samples of a cotton-warp worsted-filled fabric. We shall appreciate the following information covering these two styles:

Based on 7,032 yd. woven per week from 28 automatic looms, considering the looms running at 80% efficiency, what finishing-room equipment is necessary to balance with this production. (8460)

Finishing room equipment required to take care of your weekly loom production might include the following:

One 8-string worsted washer.

One light fulling machine. (This is really optional, as in most mills sufficient width shrinkage is obtained during scouring. However, we believe a short run in the fulling machine improves the finish.)

One crabbing machine—one-bowl type.

One tentering machine.

One conditioning sanding and brushing machine. (This machine softens the texture and imparts a velvet finish.)

One double shear.

One semi decator (to condition).

One rotary press.

One cooling and conditioning machine, if necessary to improve mellowness of finish.

One or two inspection machines.

One combination measuring and rolling machine.

Rayon Quills Irregular

Technical Editor:

I am sending you six bobbins or quills of filling and I would like to have your opinion on the following:

Is the quilling O.K.? I say, "No." Is filling formation on bobbins or

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quills uniform? I say, "No." Can filling be quilled with any degree of uniformity as to size, shape, and length of taper? I say, "Yes."

The reason for my sending you this filling is that we are troubled with breaking filling. As this is on shuttle-changing looms, it is a costly problem. *(8426)*

The quilling is not satisfactory, and the trouble appears to be mainly in the adjustment of the machine, rather than in the manner in which the work is conducted by the operators. We are of your opinion that the quills are not uniform; and we agree that filling can be quilled with a high degree of uniformity in the size, shape, and length of taper of the package. We also agree that much of your trouble lies in the lack of uniformity of the quills, as such a condition renders it very difficult to adjust the shuttle tension properly. For example, when tension is adjusted for one quill size and another of different size or taper is inserted, loose picks, slugs, or broken filling is likely to result.

We would recommend to your quilling overseer that he make more use of his adjustment gage. If he does not have one, he can easily obtain one from the makers of the machine. He should check up each spindle to see that it is not bent or loose and should watch for free movement on disk and slide. After setting the front adjusters, he should tighten them securely. The best procedure is to set one spindle correctly with respect to size, taper, lay, etc., and set the gage accordingly to give uniformity throughout.

Sizing Rayon Yarn

Technical Editor:

Is it advisable to run rayon yarns through the size and then through the quetsch roll—in other words, to give the yarn a double application of size? *(8453)*

As regards this question what is mentioned as giving the yarn a double application of size is in general practice. In running viscose yarn on a three-cylinder machine at approximately 10 to 12 yd. per min. either method might be used; but we can see more advantages in the double application of size method. On a five-cylinder machine, in running the above-mentioned yarn at about 25 yd. per min., we advise the method of passing the yarn through the "nip" only, although the double application of size might be used. On a seven-cylinder slasher at 35 yd. per min. or greater speed, it would be practically impossible to do anything other than pass the warp yarn through the "nip" of the squeeze rolls.

Sizing Worsted Warps

Technical Editor:

We shall appreciate any advice that will enable us to have better success in weaving our lining fabrics made from single worsted warps. Our usual construction calls for 2/20s worsted of a 40s quality reeded three in a dent in a No. 10 reed and laid out about 65 in. wide. We wish to use approximately the same layout, using a 1/10s warp yarn instead of the 2/20s. We are inclosing a sample of this yarn, which you will note is very hairy. Our trouble is that even after we size this yarn there is still so much of the fiber protruding from the body of the yarn that we have difficulty in always obtaining a clear open shed, and to obtain results we have to run our warps under excessive weight. When this happens, we are able to get the warp to run very well, except for about 5 or 6 in. on each selvage, which chafes badly and pulls apart, due a great deal to the rubbing of the reed on warp threads. *(8490)*

Apparently the sizing formula used is deficient in its adhesive properties, and we believe experimentation in the use of different sizing formulas the most likely solution to your trouble. For instance, a very strong size for woolen yarns consists of 2 lb. of glue to every 3 gal. of water, to which may be added not more than 1 lb. of tallow to every 50 to 60 gal. of size. The following formula gives excellent results when used on woolen yarns: 40 gal. water, 12 lb. glue, 7 lb. cornstarch, 1 lb. tallow.

In the case of worsted yarns, the average formula would be something on the following order: 50 gal. water, 18 lb. cornstarch, 4 lb. dextrin, 1½ lb. tallow.

The above formula may be altered in strength for different yarns by the addition of more or less water.

Experimentation with formulas along these lines should provide you with a more suitable sizing mixture for this fibrous type of yarn. It might also be advantageous to employ more harnesses; for example, if 2/2 twill weave is employed, draw straight on 8 or 12 harnesses instead of the customary 4. In this way the warp threads are less crowded in the loom, thereby reducing the tendency to chafe. In conjunction with this, the use of a coarser reed—say No. 7½ with 4 threads per dent—would further facilitate the weaving operation.

Finally, if the hairy condition of the yarn is of minor importance, this yarn could be subjected to a gassing process.

Streaks in Hosiery

Technical Editor:

We are inclosing the following samples: one cone of yarn corresponding to 5 thread, 90%, 20 turns; another to 7 thread, 87%, 20 turns; a third to 4 thread, 90%, 24 turns; and two corresponding to 3 thread, 90%, 24 turns; also samples of stockings made with this material, on 38-gage machines, corresponding to 5, 4, 7, and 9 threads. Although the yarn in each count corresponds to different lots, the hose has invariably turned out with stripes. We shall appreciate your opinion as to the cause of this trouble. *(8484)*

Examination of the samples shows the following grades of evenness: 3 thd., 1 cone, 90% Seriplane std.; 3 thd., 1 cone, 87% Seriplane std.; 4 thd., 87% Seriplane std.; 5 thd., 78% Seriplane std.; 7 thd., 73% Seriplane std. The cleanness corresponds closely to the evenness.

The yarn on cones is hard, absorbs water very slowly, and is poorly lubricated. In other words, it is improperly treated in throwing for knitting in the gum. Also, a general inspection of the stockings shows pronounced needle and sinker lines, due to improper adjustment of head; sleaziness due to improperly treated yarn; poor plating; and bad matches between leg and foot. There are many bands, due largely to the unevenness of the silk, and other bands due to high and low twist.

The stockings are knit single carrier, and the bands due to unevenness can be remedied to a large extent by adopting the three-carrier method. The bands due to variation in twist are the result of careless throwing and can be remedied by the throwster.

Corrections in "Spinning Speed Limit" Formulas

Some readers may be puzzled at Formula 9, Table I of article "Speed Limit in Spinning" (page 42, July issue). This formula should read

$$l = \sqrt{h' + \left(\frac{D - d}{2}\right)^2}$$

The quantity in line 25, column 3, page 44 should read ($600 \times 2 \times 72 \times 55 \times 1.25 \times \pi$); factor π was omitted from the expression as printed.

LOOMFIXERS' MANUAL

WOOL SECTION—*Chapter V*

By BENJAMIN F. HAYES

Why Shuttles Fly Out

FEW THINGS are more annoying, to loomfixers and weavers alike, than looms on which shuttles frequently (or even infrequently) fly out of the shed. In most cases, one of a relatively few causes is to blame, and the possibilities can be checked off, one by one, until the one at the base of the trouble is determined. This can then be removed. However, at other times, such conditions may be the result of any one of a number of unusual or rarely met causes. In such instances, the loomfixer will have to call into play all of his imagination and ingenuity as well as his mechanical ability, if he is to isolate and remove the cause of the flying shuttles.

Flying shuttles may be caused by the fact that some part of the reed is in front of, instead of behind, the reed adjusters, thus causing a hump which throws the shuttle out. But, considering first looms with only one shuttle, the most common cause is inaccurate alignment of the hole made by the shuttle in the picker and the tip or point of the shuttle, at the time the shuttle is about to leave the box. If this alignment is not correct, as soon as the shuttle has worn a hole about ½ in. deep in the picker, shuttles will begin to fly out.

It may seem illogical that the tip of the shuttle and the hole in the picker do not fit exactly, inasmuch as it was the shuttle itself which originally wore the hole in the picker. However, it must be remembered that the hole is worn in the picker by the impact with the shuttle during the first part of the shuttle's movement, whereas the cause just described concerns the position of the shuttle tip, as compared with the picker hole, at the part of the movement of the shuttle just before it leaves the box. And, of course, it is this last part of the movement which determines the course of the shuttle in the shed.

The easiest method of preventing shuttles flying because of inaccurate alignment is merely to place a new picker on the loom. However, this costs the mill lots of money and only puts a temporary halt to the trouble without removing the cause. Usually, it will assure satisfactory working of the loom for about three weeks, after which the new picker will have a hole cut in it, and the trouble will repeat.

A second way to eliminate imperfect mating of shuttle point and picker hole is to bend the picker spindle an amount sufficient to bring the two into line. This remedy is better than mere substitution of a new picker, both because pickers are expensive and because new pickers have a much greater tendency to break picker sticks than do old ones. However, it should not be considered a permanent repair. When a new picker is required on a loom the picker spindle should be inspected and, if it is bent, straightened.

A more economical and more permanent fix can be made by determining the cause and applying the appropriate remedy. To do this, first place the offending shuttle firmly against the reed and the inside box-guide. Then, bring the picker forward until the point of the shuttle goes fully into the hole in the picker. If the front end of the shuttle moves away from the reed as the other end enters the hole in the picker, the shuttle will fly out of the shed before it reaches the filling stop motion. If the front end turns toward the reed when the other end is pushed into the hole in the picker, the shuttle will fly out after passing the filling stop motion.

For correct operation, the shuttle must remain against the reed and inside box-guide, moving neither in nor out when its tip is pressed into the hole in the picker. Proper adjustment of the lay end will insure that the hole worn in the picker will fit the shuttle throughout its entire period of contact, and throughout the entire life of the picker, regardless of how deep the hole in the picker may become.

Truing Up Lay End

For many years it was thought (and many loomfixers still hold the same opinion) that truing-up of the lay end could only be accomplished when the warp was out of the loom, and by use of a long straightedge.

If a straight lay end were actually desired, there could, of course, be no argument against using a straightedge to assist in obtaining the proper position. However, for best operating conditions, we actually do not want the lay end straight. Hence, the writer believes the following method, which can be carried out while the warp is still in the loom and without use of a straightedge, to be superior.

First, place a new picker and picker spindle on the loom, making certain the new spindle centers the inside bearing. Next, place the shuttle in the position it would normally occupy when about to leave the shuttle box, hold it firmly against the reed in this position, and bring the new picker forward until it just touches the tip of the shuttle.

Then, scratch on the face of the picker a mark at the exact point contacted by the tip of the shuttle. Now, place the shuttle fully into the shuttle box, and note whether its tip in this position contacts exactly the same point on the picker as before. If such is the case, the lay end needs no adjustment. However, should the tip of the shuttle not touch the same point on the picker when in both the positions described, the lay end must be adjusted so that it will contact correctly.

To make such an adjustment, first loosen the lay-end bolts, of which there are two under the lay and two at its back. Then, as the particular case may require, either add packing or remove it from between the lay and the lay end until, when these parts are again tightened, the point of the shuttle, when fully in the box and when ready to leave it, contacts exactly the same point on the picker.

If it appears the adjustment will require either the addition or removal of any considerable quantity of packing, it will probably be advisable to check the markings on the picker to make certain they are not in error.

The need for exercise of care and patience when making adjustments of this sort cannot be overemphasized. To be satisfactory the job must be done correctly and, if it is done correctly, it may not have to be repeated for as much as twenty years. Hence, it can readily be seen that a loomfixer will be repaid, in freedom from future trouble, for painstaking attention to truing up the lay ends of any of his looms which are throwing shuttles out.

(*Mr. Hayes' discussion of causes of and remedies for flying shuttles will be continued in an early issue.*—EDITOR)

LOOMFIXERS' MANUAL

COTTON SECTION—*Chapter IV*

By IVAR MOBERG

Let-Off Motions

OF ALL loom motions, perhaps none has been subjected to so many improvements as the let-off. This is natural, for few other motions cause so many seconds and so retard production as poorly working let-off motions. Most of the old let-off motions are extremely laborious and require constant attention. To weave well, a warp must have proper tension and this depends entirely upon a faultlessly working let-off motion. The effect of a faultily working let-off motion must be detected by the human element, for rarely is this effect of such a nature that it will stop the loom through any of its three stop motions.

Present let-off motions are divided into three classes; namely, friction, semi-automatic, and fully automatic. Fig. C30 shows a Draper chain-friction let-off with single lever action. This is used for light fabrics. Note that the links are lying edgewise, not flat on the drum; this gives a better and more even tension. Welded link chains must, of course, lie flat on the face of the drum. With either chain the amount of friction can be governed by wrapping the chain ¾, 1¾ or 2¾ times around the drum. Adjust let-off weight arms so they will be as nearly level as the teeth in the friction let-off spool will permit, at this point leverage is maximum and less weight is required to maintain the desired friction.

Compound Levers

Fig. C31 shows a friction let-off with compound levers. The amount of friction obtainable with this let-off is much greater than that obtainable with a single lever let-off with the same weight. It is, therefore, more suitable for heavier fabrics. Compound leverage can be converted to single leverage by merely attaching the chain to the lower, main lever.

There is also a triple-lever let-off in which there are three levers, each one increasing the tension obtained from a dead weight. This is, however, rarely used because the small weights have a tendency to jump excessively when the loom is running.

Adjustment of friction let-off in itself is very simple. It is necessary to locate the motion so that the chain will not ride on flanges at either side of the drum. For an even let-off it is necessary also to see that the wraps of the chain around the friction drum are free from contact with each other. Loomfixers usually put a piece of leather under the chain to keep the wraps separated on the drum.

Causes of Uneven Let-Off

When a let-off is working perfectly, the beam and the weight on the let-off levers move slightly with every pick of the loom. However, it is exceedingly difficult to maintain this perfect working order, and causes of uneven let-off are quite numerous. In many instances the beam remains stationary for one or more picks and then jumps ahead for a like number of picks. Whether or not this will cause seconds depends upon the nature of the fabric. In fabrics with low pickage such action nearly always produces a clearly visible grouping of picks, which may cause the cloth to be classified as a second.

In looking for causes of uneven let-off the following possibilities should be investigated: (1) Warp beam not running true, due to warping of the wood, bent or crooked beam gudgeons, poorly squared-up friction drums, poorly centered bore in friction drum, etc. (2) Unbalanced beam, due to any of the above mentioned causes and/or to poor workmanship or neglect to balance beam before it is used. (3) Friction drum scored and worn by chain. (4) Cracked or broken friction drum. (5) chain riding on the drum flanges

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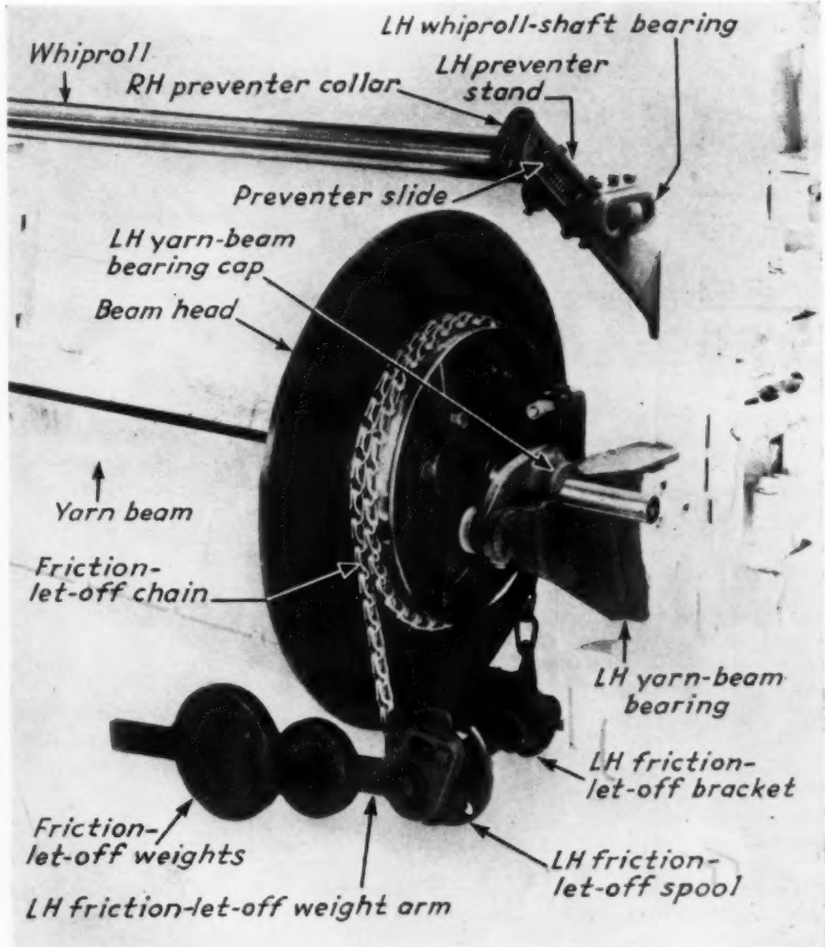


Fig. C30. Draper chain-friction let-off, with single lever action

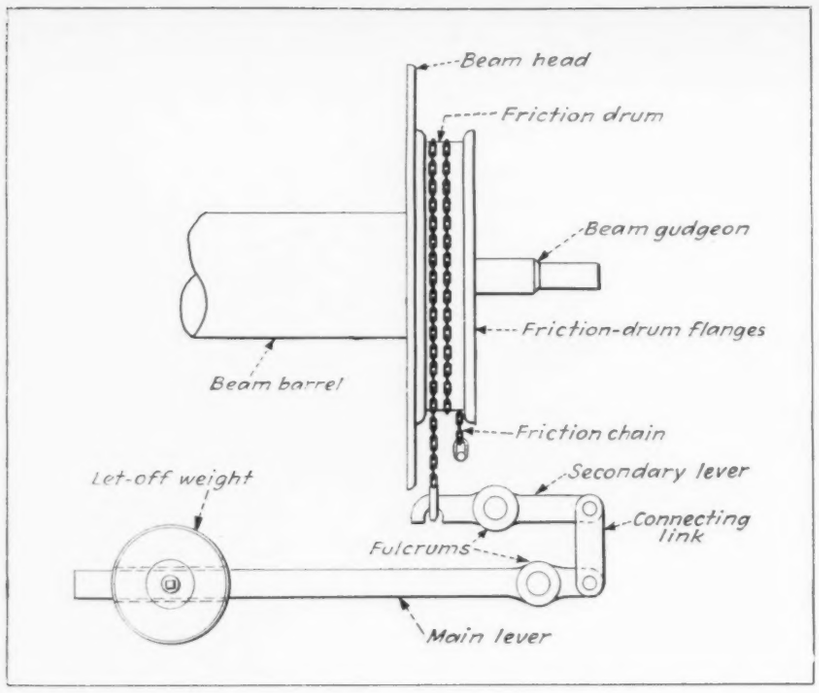


Fig. C31. Friction let-off with compound levers

and/or on the beam heads, due to incorrect position of the friction let-off bracket. (6) Friction chain twisted on friction drum, due to careless application. (7) Let-off weight resting on the floor or forced up against the warp, due to incorrect height adjustment of let-off levers. (8) Let-off weight occasionally dropping onto the floor because of broken or worn teeth in the let-off spool and/or broken or worn spool pawl. (Weavers sometimes drive bobbins in to prevent the pawl from slipping on the spool ratchet. This shows poor fixing and should not be permitted. (9) Let-off weight sliding on an inclined let-off lever, due to missing setscrew in weight or, on weights held in position by protrusion engaging notches in the let-off levers, wearing off of protrusions. (Many weavers tie a string around the weight and lever to hold the former in position. This should not be permitted; when such a condition is noted it should be promptly fixed.

(10) Beam-bearing cap badly worn, so that there is room for the beam to move up and down in the bearings. (Often beam-bearing caps are missing altogether and, in such cases, it sometimes happens that the resistance between chain and drum is greater than the combined weight of the beam and weight. Thus, one end of the beam may be pulled up against the whip roll. When the beam is again brought down in its bearing, there will be a thin stripe in one half of the cloth and a thick stripe in the other half. It is, of course, the height of folly to permit a loom to run without beam-bearing caps to hold the beam down in its bearings.)

(11) Friction drum and chain, rope, or band sticking together; due to collection of grease, oil, and lint. (This prevents an even let-off, since the beam will remain stationary for several picks and then, when the tension of the warp overcomes the resistance of friction, jump ahead an amount equal to the picks on which it has remained stationary. To eliminate this the friction medium should be thoroughly cleaned, and graphite flakes applied if necessary. Mill men do not agree concerning beneficial use of graphite, but in some cases it does help in obtaining an even tension. Its only disadvantage is that in its pure state graphite is extremely elusive; therefore, it should be mixed with some suitable adhesive substance, so that it will stay on the friction drum. Some mills use a good brand of stove-polish, in which there is an abundance of bound graphite; other mills use talcum, whiting, corn or potato starch, ground asbestos, etc. The writer's opinion is that the less used of these substances the better it is. Chains could perhaps be very lightly lubricated. Oily and sticky rope and friction band should be replaced when, or before, they begin to cause trouble.)

(12) Wraps of chain or rope around the friction drum tightly forced together. (This may prevent an even let-off, as the chain from the free end may be prevented from slackening sufficiently to permit the wraps to loosen somewhat the pressure against the friction drum. If the chain or rope is not permitted to slacken to allow the beam to move, it is much the same as though the beam were running against the dead end of the chain.)

(13) Badly worn or crooked-revolving whiproll. This often causes uneven let-off, either by its eccentricity, or by its fluctuating resistance to revolving. (14) Improperly set harnesses. (When some harnesses are lifted too high, or depressed too low, the tension of the warp is increased, and this may permit the beam to move more on some picks than on others. On two-harness work this will cause the picks to lie in groups of two with a larger space between groups).

(15) Excessively harsh pick. Sometimes but not very frequently, the jarring effect of such a pick from one side of the loom causes the beam to let-off unevenly.

Loom Beams

In weaving with friction let-off, use of perfect loom beams is most important. These must have machined, true-running friction drums, straight beam gudgeons, beam heads machined and applied perfectly square to the beam barrel, and the beam must be accurately balanced. Barrels should be made from thoroughly seasoned wood having straight grains, and should be varnished to resist moisture absorbence, as this has a tendency to warp the wood. If chain friction is used, the friction drum should not have any holes in the friction surface in which the links of the chain might become caught, since this would increase the resistance of turning. Beam gudgeons should be checked occasionally to make sure they have not become bent; balance of the beams and squareness of the beam heads should also be checked from time to time.

The stay rods, which should span the entire width of the beam, should be checked for tightness frequently. In tightening up stay rods care should be taken to tighten them evenly all around. Otherwise, if one rod is tightened up more than the others, the beam may be cramped and not run true. Lag screws, or nuts and bolts inserted a short distance from the end of the beam barrel, should never be used, as they have a tendency to break out the wood and render the beam barrel useless.

It is always on the last cut woven that most trouble with uneven let-off occurs. To eliminate this trouble it is recommended by many mill men that, on certain fabrics, the diameter of the barrel be at least 8 in.

While this will, of course, decrease the yarn capacity of the beam, the better weaving condition which is thereby obtained may sometimes make it advisable.

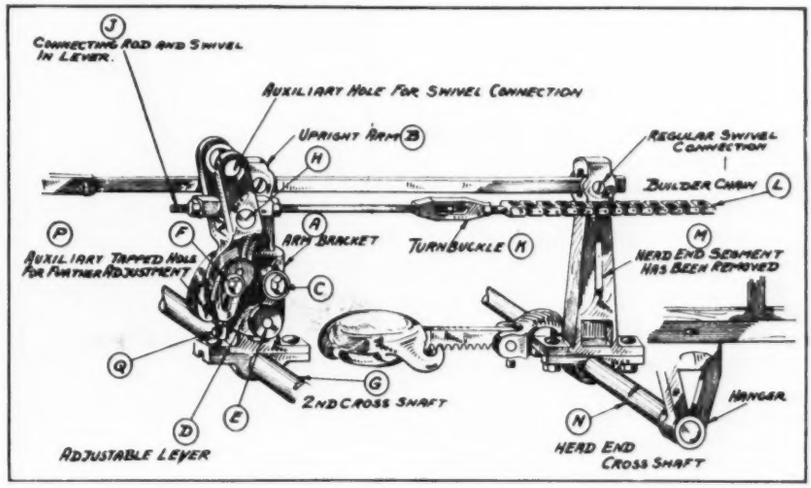
NEW MACHINERY AND PROCESSES

Improved Builder Motion

To meet the requirements of large package building, Saco-Lowell Shops, 60 Batterymarch St., Boston, has developed an improved builder motion designed to build bobbins with perfectly parallel sides. This motion will now be standard equipment on all Saco-Lowell spinning frames and standard 38-in. light twisters.

The bearings of the outer end of the builder-arm fulcrum and the camshaft are supported by a stiffener girt; the ordinary commercial chains have been replaced by large, hardened-steel chains; and the reverse shaft and quadrant have been eliminated. A new upright builder arm, Type K-E-C, is fastened on the cross shaft *G* and holds bracket *A* by means of capscrew *C*. Bracket *A* can be adjusted vertically whenever necessary. Stud *E* at the lower end of bracket *A* serves as a fulcrum for adjustable lever *D*, which can be adjusted by screw *Q* and held in place by capscrew *F*. Drilled holes in the upper part of the adjustable arm receive stud *H*, which fastens the rod connecting the builder chain with the traverse assembly.

It is stated that by means of this mechanism the vertical speed of the ring rail is kept constant, so that exact diameters of the bobbin are obtained at any point in the stroke, from one end of the doff to the other. The adjustable lever, Type K-E-C, can be applied to all existing spinning frames.



Improved Builder Motion (Saco-Lowell)

Improved Card Clothing

Howard Bros. Mfg. Co., Worcester, Mass., is now offering card clothing manufactured by its new "Tufferizing Process" for cutting and setting the wires. The process makes use of precision parts which are said to cut the wire clean and free from burrs and to insure wire that is uniformly shaped, absolutely square at the crown, and perfectly parallel throughout its length.

It is asserted that these improvements assure added life and service from the card clothing, because they minimize side and top grinding during manufacture of the clothing, because the wires fit flat and square into the foundation, and because the needle-point holes in the foundation are not enlarged as might be the case if burrs on the wire were forced through the fabric.

Knitting-Machine Stop-Motions

Several new electrically operated stop- and protecting-motions for knitting machines have been developed by Stop-Motion Devices Corp., 1263 Atlantic Avenue, Brooklyn, N. Y. Two types are illustrated. Fig. 1 is a needle protector, a small, compact device placed in position so that its pointer is close to the knitting needles. When a bunch-up occurs at the needles this pointer is deflected, and the machine stops by electrical contact, thus preventing smash-ups and broken needles.

Fig. 2 shows a spring-needle detector. This device, likewise small in size, is placed in contact with the needles of spring-needle machines, and is said to stop the machine by electrical contact the moment a bent or broken needle comes in contact with it. It is stated that damage to cloth and needle replacements are greatly reduced by operation of the device.

Fig. 1

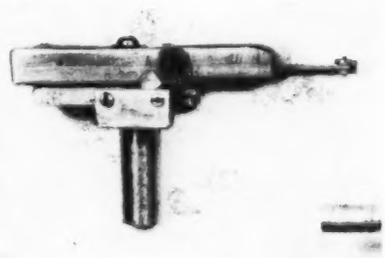


Fig. 2

Knitting-Machine Stop-Motions (Stop-Motion Devices Corp.)

The company has also developed a new stop motion for Cooper machines, which is attachable without drilling and obviates use of a threading stick, since the detector prongs are placed on a frame in easy reach of the knitter—this frame is hinged and swings out of the way, when it is desired to remove a roll of cloth, without unthreading the yarns; redesign of stop-motion controllers has also been completed; present types are approximately one-third the size of former models.

Loom Bearings

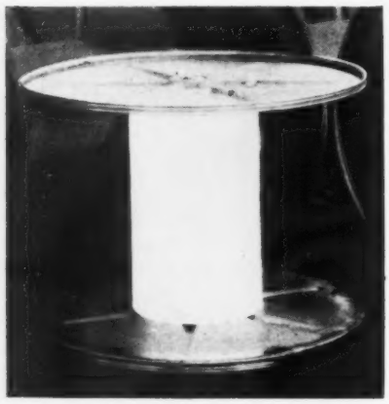
Loom bearings of the capillary-oiling type have recently been added to the line of Dodge Mfg. Corp., Mishawaka, Ind. The bearings, which are made for several generally used looms, have large oil reservoirs said to hold several weeks' supply; and high-grade babbitt-metal liners, which it is stated reduce friction losses and prevent scored shafts. Clean, filtered oil is fed to the bottom of the shaft by a wooden block, with alternate sawcuts, which is held in constant contact with the shaft by a spring. The bearings are said to have extra-heavy housings which insure shaft alignments, and to be machined to fit the loom frame.

Among the advantages claimed for the new bearings are that their capil-

lary-oiling principle is positive and unfailing; that their oil reservoir prevents oil from running out on to the loom frame, where it would catch lint and might damage cloth; and that they eliminate oil pools on floors, thus obviating the possibility of accidents caused by slipping on oil spots.

Rust-Proof Reels

Rust-proof take-up reels for sash cord are being manufactured by Mossberg Pressed Steel Corp., Attleboro, Mass. Illustration shows a reel with 32-in. diameter heads, 12-in. diameter drum, and which is 20 in. wide. The heads, which are grooved to accommodate a cord friction drive, are formed of 1/8-in. Ingaclad, an ordinary steel bonded with a 20% layer



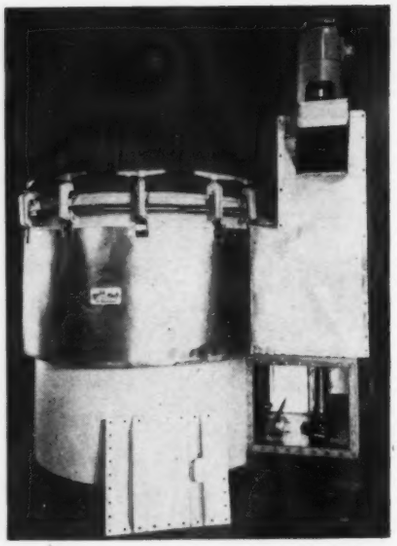
Rust-Proof Reel (Mossberg)

of 18-8 stainless steel. Ingaclad is supplied by Ingersoll Steel & Disc Division, Borg-Warner Corp., Chicago, Ill.

Stock Dyeing Machine

For stock dyeing, in lots up to 500 to 600 lb., Riggs & Lombard, Inc., Lowell, Mass., has developed a new unit-construction, stainless-steel machine.

A feature of the machine is that the main kettle and expansion tank are fabricated as a single unit, eliminating all outside pipe, valves, fittings, etc., except those required to bring steam and water to, and remove drainage from, the machine. The pump in this machine is submerged in the dye liquor and driven by a vertical motor mounted on top of the machine. Portions of the vat located above the floor level, including the cover and expansion chamber, are insulated; this is said to reduce the steam required for operation. Unloading is accomplished by means of an electric or air hoist; the perforated false bottom serves also as a



Stock Dyeing Machine (Riggs & Lombard)

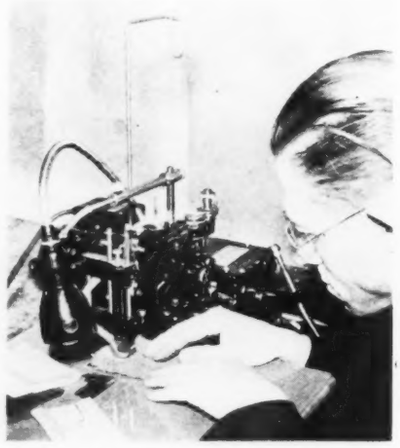
platform on which the entire batch is lifted out of the stock dyeing machine.

It is claimed the machine is satisfactory for dyeing all types of wool, as well as cotton and rayon. For rayon dyeing, intermediate trays are installed. These separate the 500-lb. load into five 100-lb. loads, and insure thorough penetration and uniform dyeing.

Stitching Machine

For stitching labels, coupling various types of textiles, basting, etc., Ernst W. C. Toepfer, 2 Broadway, New York, is introducing the new "Etika" sewing machine. It is stated that the machine can be used in connection with either piece goods or formed materials, that it can be operated without danger even by unpracticed operators, and that the single thread with which it stitches can easily be loosened by hand without doing any damage to the stitched material.

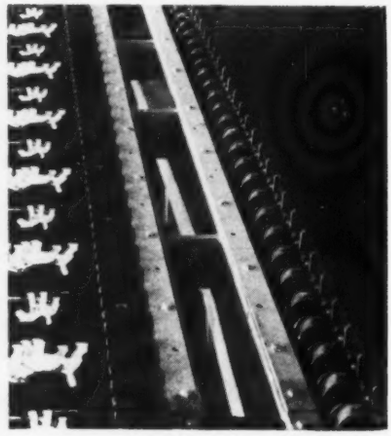
The machine is equipped with a counting device, and can be fitted with a motor for any current specified by the purchaser.



Stitching Machine (Toepfer)

Laminated Bakelite Tenter Frame Rails

Development of tenter frame rails made from Phenolite (laminated Bakelite) has been announced recently by National Vulcanized Fibre Co., Wilmington, Del. In the construction of the rails, a special grade of Phenolite is used, which has the ability to withstand high temperatures continuously with minimum deterioration and so resist wear of the sliding tenter clips.

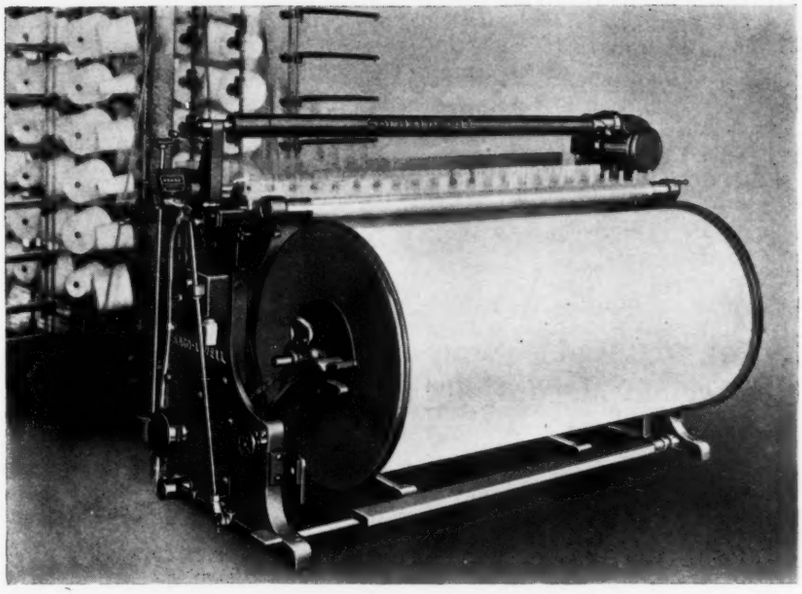


Tenter Frame Rails (National Vulcanized Fibre)

Use of this special laminated stock permits raising of the tenter-house temperature from 280° to 350° F., with a proportional increase in cloth speed and production. Another advantage cited is that, due to the long life of the rails, maintenance costs on the frame are greatly reduced.

Warper and Slasher for Wide Beams

A warper announced recently by Saco-Lowell Shops, 60 Batterymarch St., Boston, will take beams measuring 66¼ in. between heads and 30 in. in diameter. The low frame and the cylinder with the internal drive and internal auto-type expansion brake make it possible to run these beams without putting the working plane at an inconvenient position for the operative. No matter how large the beam, the average warper tender can always reach the back comb as well as the expansion comb, so that the ends can be tied in straight and not get crossed. The quadrants which support



High-Speed Warper for 66¼-in. Beams (Saco-Lowell)

the bearings for the beam spindles are designed so that the pressure on the yarn sheet is constant at all times while it is being wound onto the beam. A feature of this warper is a new clock which, after it has been set for a given yardage, will repeat this yardage without further attention until it is desired to make a change in the length of the set. The clock can be applied to all Saco-Lowell Model D warpers equipped with the electrical stop motion.

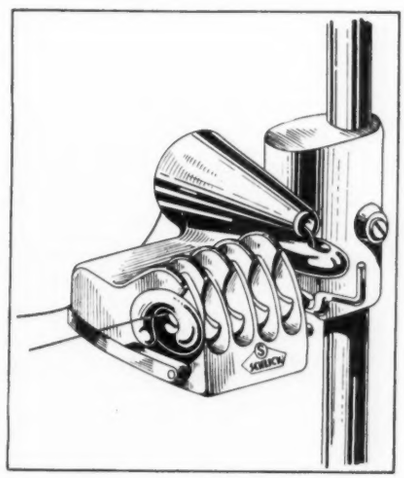
This same company has developed a high-speed slasher, Model 38-2, which takes loom beams measuring 114 in. between heads and 24 in. in diameter. It has four cylinders; the same type of size box as the regular high-speed slasher, Model 38; and a speed-control mechanism between the delivery roll and the size rolls, which allows control of the warp tension between these two points without stopping the slasher to change the wrapping on the delivery roll.

Vacuum Yarn Steamer

For steaming yarn evenly throughout the package, Sanderson & Co., Manchester, England, has developed the Brandwood vacuum steamer. Air is pumped out of the drum until an initial vacuum of about 26 in. of mercury is obtained, when the pump stops and a steam valve opens. Steam is admitted until the vacuum is reduced to about 7 in. of mercury, at which point the steam valve closes and an air valve opens to bring the pressure within the drum back to atmospheric pressure. All action, after starting of the vacuum pump, is entirely automatic. Time for complete penetration is about 10 min. The vacuum steamer is obtainable in capacities varying from 5,000 to 200,000 lb. of yarn per week; and it is stated that the cost of steam, power, and labor for vacuum steaming is 5c per 100 lb. of yarn.

Yarn Drag-Device for Warpers

The Schlick pneumatic differential yarn drag-device for warpers has been announced by Robert Reiner, Inc., Weehawken, N. J. It is asserted that the device, which is made entirely of special hard china, will permit the passage of any kind of material, from the finest silk thread to the coarsest wool yarn, without the necessity of resetting; and also that use of the device insures uniform yarn tension at any speed and a suitable preliminary tension when the yarn is at rest. Several types of creels sold by Reiner are equipped with this device.



Yarn Drag-Device (Reiner)

Useful Accessories for Textile Mill Use

Portable Mixer. Mixing Equipment Co., Rochester, N. Y., has begun use of a new type of pre-lubricated sealed ball bearing in the extended bearing of its mixers; this is said to make certain no grease or oil will run down the shaft.

Magnetic Contactors. Recently placed on the market by Cutler-Hammer, Inc., Milwaukee, Wis., is a line of a.-c. magnetic contactors for small, continuous-duty, single-phase and polyphase motors.

Turbine Driven Pump. Ingersoll-Rand Co., Phillipsburg, N. J., has announced a new turbine-driven pump, known as Class TRV, which features a compact construction that combines both turbine and pump as one unit on a common shaft.

Gate Valves. A new line of U-bolt gate valves manufactured by Jenkins Bros., 80 White St., New York, features a renewable "bonnet-saver bushing," which is said to make it unnecessary to discard the valve bonnet when operating threads become worn.

Lubricator. To supplement its general line of lubricators having reservoir capacities of 1 to 6 pt., Bijur Lubricating Corp., Long Island City, N. Y., has brought out a new model, known as the Type L, which has a reservoir capacity of ¼ pt.; with this lubricator it is possible to discharge as little as 10 drops of oil at a time.

Transformer for Mercury Lamps. To supplement its standard line of transformers for mercury lamps, General Electric Vapor Lamp Co., Hoboken, N. J., has recently introduced a new Tulamp transformer, designed to operate two 400-watt, Type H mercury lamps at peak efficiency and at 90 to 95% power factor; use of the double-duty unit is said to give a saving of some 20% in transformer costs, and to reduce transformer losses 30% in comparison with two single-lamp units.

Circuit Breakers. Allis-Chalmers Mfg. Co., Milwaukee, Wis., has added to its line of electrical equipment two new moderate-capacity oil circuit breakers. Type OZ-110 is for outdoor use; Type DX-25, for indoor application.

Gage Saver. Ashcroft American Gage Division of Manning, Maxwell

& Moore, Inc., Bridgeport, Conn., is offering a gage-throttling device said to save wear on gage movements wherever pressure pulsations are especially severe, and also to prevent corrosion and fracture of the Bourdon spring.

Light Hood. Curtis Lighting, Inc., 1123 W. Jackson Blvd., Chicago, is now offering a light hood adapted for use with silvered-bowl lamps. The hood is designed to produce high intensity, uniform light from a large surface, with low brightness and a minimum of glare, and is said to be particularly adapted to hosiery and other knitting mills.

Rate-of-Flow Indicator. For use with its water-treating equipment, Permutit Co., 330 West 42nd St., New York, has developed a new rate-of-flow indicator said to permit the operator of filtration and softening equipment to control the flow through the various units of a battery so that each will bear its correct share of the total load.

Variable-Speed Equipment. Reeves Pulley Co., Columbus, Ind., has recently announced a new type of speed indicator, known as "Speedial," said to give a more accurate indication of speed settings. Another recent development of the company is a fluid pressure control for automatic and remote control of variable-speed drives.

Switches and Circuit Breakers. Two new additions to the line of General Electric Co., Schenectady, N. Y., are a cam-operated circuit-breaker mechanism, and a line of magnetic reversing switches with air circuit breakers.

Binocular Microscope. Bausch & Lomb Optical Co., Rochester, N. Y., has developed a new wide-field binocular microscope said to be useful for all low-power work, including magnifications from 2.34 to 150 diameters.

Unmounted Roller Bearings. Link-Belt Co., 307 N. Michigan Ave., Chicago, has recently placed on the market a line of radial-thrust, single- and double-row roller bearings in the naked or unmounted form.

Lighting Unit. "Correctalite," recently introduced by Holophane Co., Inc., 342 Madison Ave., New York, is said to combine the advantages of both direct and indirect units, and to eliminate certain disadvantages of each.

Splash-Proof Motor. A new line of splash-proof motors, in which an effective baffling system is said to prevent entrance of water or falling particles, has been developed by Diehl Mfg. Co., Elizabethport, N. J.

Telephone System. A new type of telephone system, said to permit use of any number of stations and to operate without any power costs, since no batteries or other power sources are needed to operate the speaking circuit, has been introduced by Telephone Systems Co., 120 Greenwich St., New York.

Method for Modernizing 18-Section Machines

Conversion of 18-section full-fashioned hosiery machines into 24-section machines is made possible by a method discovered by Gotham Silk Hosiery Co. This is accomplished by splitting an ordinary 18-section machine into 12 sections and 6 sections, inserting 6 additional sections, and coupling or welding these to the original sections. Thus, four 18-section machines can be converted into three 24-section machines.

According to Gotham officials, the chief drawbacks to the short-section machines are that they operate at a comparatively low speed of 50 to 56 courses per minute, as against 60 to 70 for more modern equipment, and that, due to the smaller number of sections, labor costs are high. In its search for a way to overcome these disadvantages so that the short-section machines could be made to operate at a profit, Gotham devised the simple method mentioned above and is now passing on the idea to the industry as a solution of the problem of "What to do with 18-section machines."

At the same time the 6 additional sections are inserted, the machine is fitted with a few parts, such as shock absorbers, balancing cams, etc., which permit the speed to be brought up to at least 60 courses per minute. The increased production and labor savings are said to repay the cost of modernization in less than a year. In addition, there is some salvage value in the parts left over from breaking up the 18-section machines; for example, for each set of four machines modernized, there would be one three-carrier attachment and one reinforced selvage attachment left over, which could be sold or used for replacement.

NEW DYES & CHEMICALS

Indigo and Acid Dyers

National Aniline & Chemical Co., Inc., announces the following new products: National Brilliant Indigo KMR Double Paste, a product having the same general fastness properties as other Brilliant Indigos, but producing a deeper and more covered shade; it is of particular importance for the production of cheap navies on cotton, rayon, and silk. National Milling Black B, a neutral-dyeing acid black yielding bloomy black shades of very good fastness to light, and excellent fastness to washing and sea water; it is readily dischargeable with hydrosulphite.

Vat and Direct Colors

E. I. du Pont de Nemours & Co., Inc., announces the following new products: Leucosol Black RA Double Paste, a vat dye suitable for direct or color discharge printing, which was developed for use in instances where other colors have given trouble by marking off on white grounds or viscose rayon fabrics; it can be used on cotton, but is of particular interest for use on bright and delustered viscose rayon and saponified acetate fibers. Pontamine Fast Blue 4GLN, a direct dye equal in strength, fastness to light, and general application characteristics to Pontamine Fast Blue 4GL, but producing a greener and brighter shade; it is readily dischargeable.

Acetate and Rapidogen Dyes

General Dyestuff Corp. announces the following new products: Celliton Fast Scarlet RN, a new acetate dye yielding yellowish scarlet shades superior in fastness to light, perspiration, and cross-dyeing to those produced with Celliton Fast Scarlet R; it can be used for direct printing, as well as for dyeing. Rapidogen Brown IRRN, an improved grade of Rapidogen Brown IRR; the new product is more easily soluble than the old brand and also develops more rapidly in acid steam; a very short steam passage with, for instance, Aniline Black resist styles, and normal acid vaporizing are sufficient to give full prints of good yield.

Softener and Plasticizer

A new compound recommended by the manufacturer for use as a softener, plasticizer, and flexibilizer for textiles, has been announced recently by Glyco Products Co., Inc., 180 Lafayette St., New York. This prod-

uct, known as Yumidol, is described as a straw-colored viscous liquid which is less hygroscopic than glycerine in moist air and which retains its moisture longer in dry air. The compound is made from vegetable raw materials and contains no animal matter.

NEWS OF SUPPLIERS

American Moistening Co., Providence, R. I., is celebrating its fiftieth anniversary in business. The company, in its announcement of this fact, does not view the event from the standpoint of mere survival but from the standpoint of accomplishment that justifies its existence. It points out that dry air was a weather hazard to the textile mill when the company first went to work, and mills began to learn that adequate humidification reduced flaws and imperfections and held regain at the profit point. "A Half Century of Engineering Accomplishments in the Battle Against Dry Air" is briefly dramatized in the company's announcement.

American Cyanamid Co., New York, has disposed of its interest in **John Campbell & Co., Inc.,** to a group of Campbell employees who will continue to supply the consuming trade as heretofore. The main office will be continued at the same address as before, 75 Hudson Street, New York, with branches in Philadelphia and Boston.

Westinghouse Electric Supply Co., East Pittsburgh, Pa., has elected Walter Williamson, manager of apparatus and supply sales, as vice-president. He will carry the responsibility for the development of the company's apparatus and supply business, both as to operations through the company's 72 branch houses in the field, and as to relationships with suppliers.

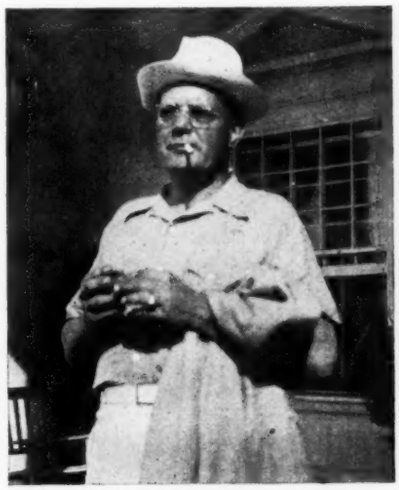
Westinghouse Electric & Mfg. Co. has created an agency sales department according to Ralph Kelly, vice-president in charge of sales. F. R. Kohnstamm has been appointed manager of the new department, with headquarters in Cleveland. He will continue his present duties as manager of the lighting division also located there. The responsibilities of the new department will be to develop sales volume for all apparatus of the company, other than domestic equipment, lamps and certain other products now sold through retail channels, that are distributed through sales agencies appointed by the company.

Terrell Machine Co., Charlotte, N. C., has appointed John J. Wilson as sales manager. He was formerly in charge of the Charlotte territory. He will be succeeded in that capacity by W. S. Terrell from the Greenville territory, who will be succeeded in turn by Irwin P. Graham. R. Bigham Smith will continue at Atlanta. George W. Bowen has been appointed superintendent of Terrell's bobbin plant succeeding I. F. Clouts who has accepted a position with the Charlotte Supply Co.

Calco Chemical Co., Inc., Bound Brook, N. J., announces that John H. Grady, formerly manager of the Boston office of John Campbell & Co. has become associated with Calco's Boston office. George Lommel, formerly vice-president of John Campbell & Co., New York, is now associated with the main office in Bound Brook. Robert P. Wood, formerly in the finishing business, is with the Calco office in Providence.

American Crayon Co., Sandusky, Ohio, has opened a branch office in Chicago, at 1483 Merchandise Mart. Customers in this area will be served by these representatives: Adrian L. Biddle, R. K. Eversole and Eben Dunlap. The eastern headquarters of the company has been moved to 9 Rockefeller Plaza. William J. Calhoun is manager in charge. Additional branch offices are maintained at Dallas and San Francisco.

Lewis-Shepard Sales Corp., Watertown, Mass., has made the following additions to those representatives who handle its line of lift trucks, portable elevators, floor trucks, skid platforms, etc.: Wesley D. Low, Knoxville, Tenn.; Industrial Supply Co., Salt Lake City, Utah; J. W. Ralston Co., Seattle, Wash.



FRED TILSON, representative of Mathieson Alkali Works, Inc., who makes his headquarters at Charlotte, N. C., snapped at the summer outing of the Piedmont section of the American Association of Textile Chemists & Colorists at Myrtle Beach, S. C.

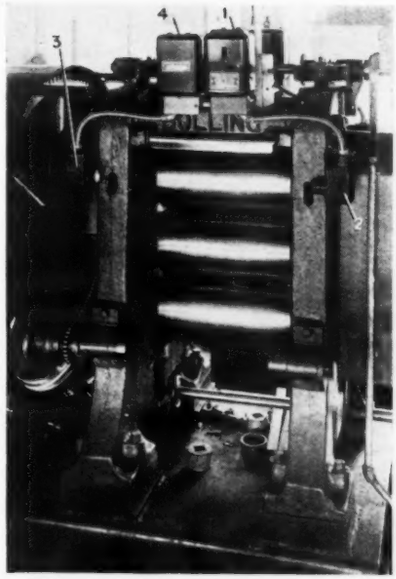
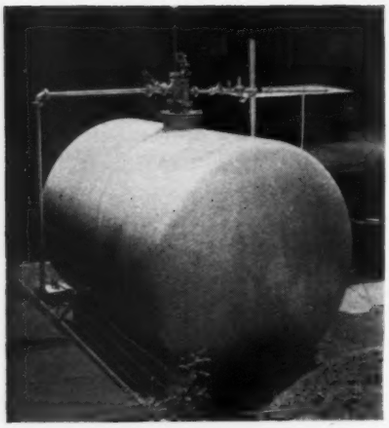


PHOTO-ELECTRIC SAFETY DEVICE APPLIED TO CALENDER. — The accompanying photograph shows a calender used for experimental work in the laboratories of American Cyanamid Co., Stamford, Conn. In order to prevent accidents the calender has been equipped with photo-electric safety devices which make it possible for the operator to stop the machine by waving his arm across the calender. Thus, if the operator or his clothing gets caught in the calender, he can stop the machine instantly, avoiding the delay involved when nearby operatives have to be called for assistance. In addition to the safety features, there is the possibility of reducing damage to the cloth because of the speed with which the calender can be stopped. The safety device was installed by employees of American Cyanamid Co., and consists of a General Electric standard photo-electric relay (1) extended phototube holder, (2) standard light source, (3) transformer, (4) and contactor to stop the motor in case the light beam is intercepted. As this particular calender is designed to run in either direction, a duplicate safety device has been mounted on the other side. Another arrangement which might be advantageous under textile mill conditions is to stack several light sources and phototubes vertically so that the light beams will be close enough together to form a "screen of protection" over the entire front of the machine.

Link-Belt Co., Indianapolis, Ind., has completed a new Roller Chain Data Book containing 174 pages of practical information, application pictures and engineering data. Included is information on new lines of stainless steel and bronze chains. The book is not offered free to the inquirer, but will be sent to those who select, order or use rolled chain equipment.

Republic Steel Corp. reports two changes in operating heads at the Masillon, Ohio, plant of the Union Drawn Steel Division. Thomas Weiskopf, formerly assistant superintendent, is now superintendent, and



INSTALLATION at Rock Hill Printing & Finishing Co., Rock Hill, S. C., of a storage tank and distribution system for acetic acid has resulted in definite savings, due to reduced handling costs and ability to purchase in bulk lots, rather than in barrels or bottles. Installation consists of a 10,000-gal. storage tank designed for 100 lb. working pressure and lined with 3/16-in. Super-Flexite rubber, and 645 ft. of rubber-lined pipe. The tank, and all pipe, valves, and fittings were rubber-lined by B. F. Goodrich Co., Akron, Ohio.

Frank A. Garvey is assistant superintendent.

Belmont (N. C.) Box Co., Inc., has been organized to manufacture boxes for hosiery mills in that section. The concern has been incorporated for $50,000. A. C. Lineberger is president; Joseph A. Lineberger, vice-president and assistant treasurer; J. M. Hatch, second vice-president; Henry A. Lineberger, secretary and treasurer, with T. P. Bane as superintendent.

C. M. French, exporter of hosiery machines, Commercial Trust Bldg., Philadelphia, is returning in the middle of August from a four-week business tour of England, Holland and France.

Bakelite Corp., New York, has installed the Bakelite Travelcade at the Franklin Institute, Philadelphia. It is an exposition of "Modern Plastics for Modern Living."

Solvay Sales Corp. has opened its new offices at 3615 Olive St., St. Louis, Mo. The building is modern and air-conditioned. Official opening was on July 18.

Carolina Roller Covering Shop, formerly of Maiden, N. C., has completed the removal of the machinery to Lincolnton, N. C. The company covers rollers for 32 cotton mills in the two Carolinas.

Blaw-Knox Co., Pittsburgh, Pa., has appointed H. W. Greenberg as sales manager of its Sprinkler Division. Mr. Greenberg has had more than 20 years experience in connection with the engineering and sales of automatic sprinkler systems.

Acheson Colloids Corp., Port Huron, Mich., announces that Raymond Szymanowitz, formerly its technical director, has been moved up to vice-president and technical director of Acheson Industries, Inc., technical development company for the Acheson interests. He will continue supervision of all research activity of Acheson.

Worthington Pump & Machinery Corp., Harrison, N. J., has transferred William J. Daly, formerly Detroit district sales manager, to the corporation's Philadelphia office to succeed the late C. H. Shaw. Mr. Daly will be assisted by W. J. Van Vleck. Ludwig Emde succeeds Mr. Daly at Detroit.

Oliver United Filters, Inc., have appointed C. W. Crumb as Central division sales Manager with headquarters at 221 N. LaSalle St., Chicago, Ill. Mr. Crumb has been connected with Oliver United for the last 11 years as sales engineer.

Norma-Hoffmann Bearings Corp., Stamford, Conn., has completed an extension to its present buildings and has placed substantial orders for new machine tool equipment.

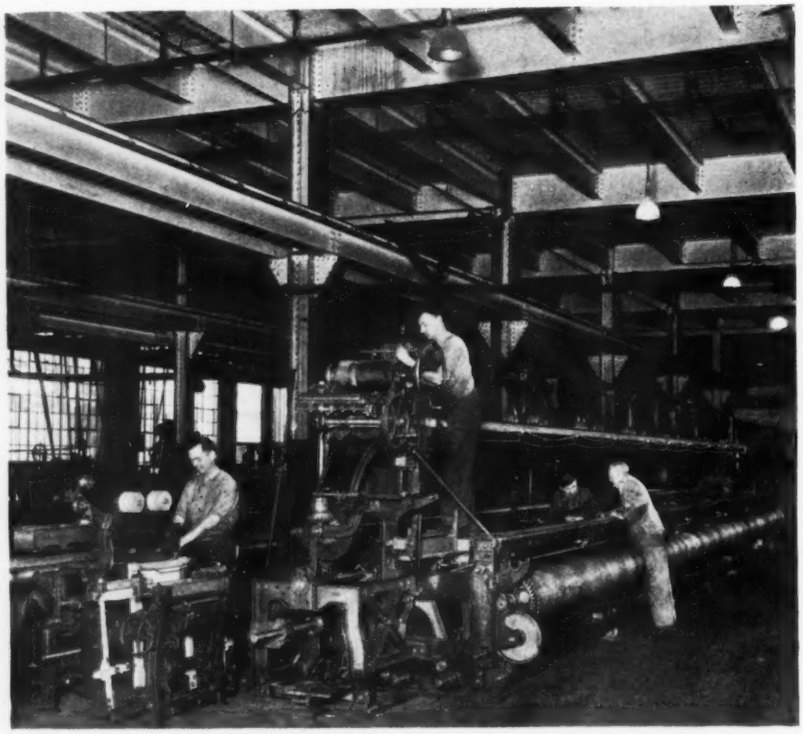
W. A. Hunt, superintendent of the Pickett Cotton Mills, High Point, N. C., has resigned to accept the position as Georgia, Alabama and Tennessee representative of Mill Devices Co., Inc., and Carter Traveler Co., of Gastonia, N. C. Mr. Hunt will maintain headquarters in LaGrange, Ga.

L. J. Wing Mfg. Co., heating and ventilating equipment, New York, N. Y., has appointed T. F. Schenke as Cleveland, Ohio, representative for its heating and ventilating equipment only. A. C. Danks, Cleveland, will remain in charge of sales of blowers, turbines, etc.

Ph. Deck, of the firm of A. Deck, Mulhouse, Alsace, France, manufacturer of bleaching, dyeing, printing and conditioning machinery for textiles, arrived in New York, Aug. 8. He is making his headquarters with the French Commercial Attache, 610 Fifth Ave., New York, while studying the American market.

Harnischfeger Corp., Milwaukee, manufacturer of traveling overhead cranes, excavators, etc., has appointed H. S. Strouse as vice-president. He will continue to serve as treasurer.

Charles Bond Co., Philadelphia, Pa., mill supplies, is marking its 50th anniversary in business. Charles Bond, founder and president, was tendered a dinner on July 22 attended by 138 officers and employees of the company and its affiliates.



CONTRASTS showing Crompton & Knowles Loom Work's largest and smallest. At left, an 18 in. loom made for laboratory use and sample weaving; at right, a 540-in. Type A felt loom capable of weaving a tubular fabric with 1040 in. circumference

NEW PUBLICATIONS

A SOUTHERNER DISCOVERS THE SOUTH; by Jonathan Daniels; MacMillan Co., New York; $3.00.

"The best book on the modern South that has yet been written is Mr. Daniels'." That's what Gerald W. Johnson has said, and we consider it a complete review of "A Southerner Discovers the South."

As a piece of reporting, this book is the most nearly perfect job we recall. We are not referring now to any implications which Mr. Daniels suggests, nor to the few conclusions he draws. Rather, we mean the picture he gives to the reader, of the land, the people, the customs, the thinking which he encountered in his voyage of "discovery" through his own Southland. As one who knows most of the sections which Mr. Daniels visited, this reviewer got all the thrills which come from reading about places and persons with which we are familiar. But we believe a stranger to the South would also get a clear impression from Mr. Daniels. At any rate, we can't imagine any literate person interested in the South failing to read this book.

Of course, the author, who is editor of the Raleigh (N. C.) *News and Observer*, is a liberal, and as such does not try to white-wash any existing institutions or habits of thinking, merely to preserve the status quo. But on the other hand, he doesn't accept something new merely because it is new. We regard his book as a 100% sincere attempt to be fair—and an almost 100% success in that attempt.

The only person who shouldn't read the book is one who gets apoplexy when he reads something with which he may not be in complete agreement. All others will have a swell time.

HOW THE FASHION WORLD WORKS; edited by Margaretta Stevenson. Harper & Bro., New York. $2.50.

A compiled series of lectures given at the Fashion Group's Training Course is made into a most readable book which sets forth the various callings which make up the fashion world and indicates the methods by which fashions are presented to the fashionable.

This is, actually, a textbook. It sets forth the things which are done in different lines of the fashion business, and the possibilities of advancement and economic gain to be found. The facts presented are based upon actual experience by leading members of the fashion world and carry strength which could not be found in theoretical deduction.

It is splendid reading for the manufacturer who seldom understands the problems of the person who works to put his manufactured goods before the consuming public; it is good for the sales girl who hopes someday to fill a managerial capacity; it should be available to every college girl who has not yet found her chosen work but who says languidly as she flicks her cigarette ash, "I guess I'll try designing," as well as to the young woman who knows she wants a fashion career, who is willing to take the jumps but who doesn't know how to start.

BULLETIN OF THE WOOL MANUFACTURERS, Vol. LXVII; National Association of Wool Manufacturers, New York and Boston; 538 pages; price $2.

This annual publication of the association representing the wool textile industry contains the association's record for 1937 together with an extensive collection of statistics bearing upon the industry.

PROCEEDINGS, 22ND ANNUAL CONVENTION, AMERICAN COTTON MANUFACTURERS ASSOCIATION; A.C.M.A., Charlotte, N. C.; 160 pages.

This report covers the N.A.C.M. meeting at Augusta, April 28 and 29, 1938. It includes a list of members of the association, a list of the past and present officers, and a biographical sketch of John Henry Cheatham who is president for the current term.

AMERICAN WOOL HANDBOOK; by Werner von Bergen and Herbert R. Mauersberger; American Wool Handbook Co., 303 Fifth Ave., New York; $3.95.

The purpose of this book is to provide in one volume data on the growing, marketing, and grading of wool, and on the manufacture of woolen and worsted fabrics. It is intended for use as a reference and text book for the trade, as well as the student, economist, and consumer. Subjects treated include sheep raising and wool growing; physical and chemical properties of wool; grading and marketing of wool; sorting, scouring, carbonizing, woolen carding and spinning; worsted carding, combing, drawing, and spinning; weaving and weaves; dyeing and finishing; physical and chemical testing.

There has been a definite need for a comprehensive handbook covering American technique in the manufacture of woolen and worsted yarns and fabrics. This is the first attempt in many years to supply that need, and the book will, therefore, undoubtedly find a wide acceptance as a reference volume. It is particularly regrettable, therefore, that the authoritativeness of the book is marred by a number of contradictory statements. For example, in one place it is stated: " . . . . the cap method of spinning is very popular in America, and practically all Bradford-spun worsted yarns are spun on this system." In another place it is stated: " . . . . demand for larger packages and increasing competition and the necessity of reduced production costs, has driven cap spinning definitely into the background." Again, in one sentence on page 449 it is stated, " . . . . in whatever form the yarn is received or bought, it requires with most mills a rewinding process." Another sentence on the same page states: "Today very little yarn rewinding is necessary, except in the case where warp yarns are subjected to a dyeing process for yarn-dyed worsteds."

MINGLED YARN; by Willie Snow Ethridge; MacMillan Company, New York; $2.50.

The struggles of a liberal-minded newspaper man living in Georgia and bound by marriage ties to the controlling interests of a large textile concern portrayed both as paternalistic and capitalistic, is the not too exciting plot of Mingled Yarn. The title proclaims it as a textile novel but it is as completely newspaper as Front Page. Textile problems are presented not as such, but as foundation for news stories and as family arguments between the socialistically inclined editor and his capitalistic-born wife. Textile strikes, the Bedaux system, the Gastonia Communistic uprising, the questionable good of mill villages and the paternalistic awards and advantages offered to its operatives by the mill management, are vital themes lost in the maze of KuKlux floggings and Georgia Methodism.

One feels that the author is trying to present both sides of the question of textile mill village life as-it-is-lived vs. mill management but that she is too completely saturated with her own background of newspaper life and activities to segregate the manufacturing and editorial problems. By her failure to do so, the force of each is weakened.

FREE FOR THE ASKING

READERS interested in literature reviewed on this page may secure copies by writing to TEXTILE WORLD, 330 West 42d St., New York, giving their company connection.

Recorders and Thermometers. Mason-Neilan Regulator Co. Bulletin No. 3010, 44 pp., describes pressure recorders and recording and indicating thermometers.

Cost-Cutting Standards. John Silver Corp. Folder describes system for co-ordinating machine standard efficiency with human effectiveness.

Boiler Meters. Bailey Meter Co. Bulletin No. 46 describes company's boiler meters; contains sections on construction, installation, engineering data, etc.

Endless Belts. Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc. Bulletin 6869 describes construction and applications of Condor Whipcord endless belt.

Chain Link Fence. Wickwire Spencer Steel Co. Catalog No. F-120 gives details of construction, specifications, erection service, etc., of company's products.

Textile Tests. Hatch Textile Research, Inc. 1938 price list of tests conducted by this organization.

Coal and Ash Handling. Link-Belt Co. Illustrated book, No. 1510, contains ideas and suggestions for cutting handling costs in power plants.

Plant Site Data. North Carolina Department of Conservation and Development. Booklet titled "The Balanced State—North Carolina" presents facts and figures regarding North Carolina's natural resources, power and transportation facilities, etc.

Marking Crayon. Eberhard Faber Pencil Co. Leaflet describes various industrial crayons, including "Fabricrayon."

Corrosion-Resistant Metals. Allegheny Steel Co. Booklet titled "As the World Sees Allegheny Metal" describes and pictures uses of company's products.

Industrial Thermometers. Foxboro Co. Folder describes advantages of company's dial type indicating thermometers.

Oilless Bearings. Bound Brook Oil-Less Bearing Co. Vol. I, No. 1, of *The Reservoir* describes uses and advantages of company's products.

Valves. Crane Co. Three booklets; one discusses company's line of check valves; another, plug disk valves; the third, installation of plumbing and heating equipment in industrial and commercial buildings.

Coordinated Process Control. Bristol Co. Bulletin No. 511 describes and illustrates installations using company's system of coordinated process control.

Hand Trucks. Fairbanks Co. Catalog 52-82, 50 pp., describes company's line of platform and special-purpose trucks; contains data on dimensions, weights, etc.; describes numerous trucks having special textile-mill uses.

Control Instruments. Brown Instrument Co. Folder 89-9 describes company's line of air-operated controllers; No. 94-1 describes equipment for remote transmission of measurement and control in hazardous atmospheres.

Building Products. Republic Steel Corp. Booklet, 30 pp., describes a wide variety of steel building products manufactured by the company.

Pumps. Ingersoll-Rand Co. Complete specifications and operating characteristics of company's two-stage centrifugal pumps are contained in Bulletin 7067.

Electrical Equipment. Westinghouse Electric & Mfg. Co. Booklet describes company's "Silverstat" regulators for automatic voltage control of small generators; leaflets describe heavy-duty push-button stations and De-ion non-reversing linestarters.

Engines and Ejectors. Worthington Pump & Machinery Corp. 36-page booklet, No. S-500-B13 illustrates various installations of Diesel and gas engines; Bulletins W-205-B4 and W-205-B5 describe, respectively, single- and double-element steam-jet ejectors.

Motors. Fairbanks, Morse & Co. May-June issue of company's house organ contains illustrated story of installation at Great Lakes Thread Co.

Switches and Controllers. General Electric Co. Bulletin GEA-1724A describes controllers for synchronous motors; GEA-2908 describes oilproof push button and selector switches; GEA-2234B describes manual motor starting switches; GEA-743B describes a-c reversing drum switches; and GEA-19H describes a-c magnetic motor-starting switches.

Lighting Equipment. Fostoria Pressed Steel Corp. Catalog M.L. 11 describes and illustrates canopy-type lights; Vol. 1, No. 1, of the *Fostoria Roll Call* lists users of company's equipment.

Electrical Control Apparatus. Trumbull Electric Mfg. Co. First issue of *The Trumbullist* gives compact listing of company's products.

Sizing Material. E. F. Houghton & Co. April–May issue of *The Houghton Line* contains articles on sizing formulas and stock lubricants.

Alloy Steels. Joseph T. Ryerson & Son, Inc. Leaflet describes and gives technical data concerning heat-treated alloy steels.

Knitting Machinery. Wildman Mfg. Co. Bulletin describes, and illustrates with fabric sample, possibilities of rayon pattern machine.

Variable Speed Control. Reeves Pulley Co. Catalog G-384 describes company's complete line of equipment for adjustable control of machine speeds; includes large data section, and many installation photographs.

Industrial Cleaning. Connecticut Blower Co. Four-page bulletin, No. 63, illustrates and describes line of industrial vacuum cleaning systems manufactured by this company.

Dyeing and Printing Equipment. Consolidated Products Co. Folder listing dyeing, printing, finishing, and auxiliary equipment available through recent liquidations.

TEXTILE WORLD ANALYST

TEXTILE WORLD'S index of textile mill activity for June gave the first statistical encouragement the industry has had for months. It showed a slight rise (6%) over the previous month. This contra-seasonal trend was definitely due to the better tone which had just started to set in late in June; however, the real effect of the improvement will not be statistically visible until July figures are available. . . . . June activity was also encouraging in that, although sharply (34%) below the corresponding month last year, it was only 6% below a "normal" June (1924-31 average). The index for the first half of the year was 40% below the first half of 1937 (which was phenomenal), and 20% below the first half of a "normal" year. . . . . During the balance of the year, a reverse trend should set in: that is, the mill activity figures should make a progressively better showing as compared with last year, since the last half of 1937 was characterized by a decline, while the contrary should be true during the balance of 1938. . . . . Preliminary reports for July indicate a sharp increase in cotton consumption; and all-time record rayon yarn deliveries for a single month.

TEXTILE WORLD'S compilation of manufacturing margins for carded cotton fabrics and yarns showed increases in both series in July, but not in proportion to the improvement in business and in sentiment. Margins had declined so sharply during the previous months that prices are still unsatisfactory so far as profit possibilities are concerned. If the better outlook continues, manufacturers are hopeful that it will bring about broadening of margins.

TEXTILE WORLD'S price index numbers registered advances in July in raw cotton, cotton yarns and gray goods; in raw wool and tops; and in silk. All others remained unchanged except colored cotton goods which declined. The latter was due to a technicality, however, as the index numbers are based on list prices which had not previously reflected the price concessions being made; actually the price improved in July. . . . . The July index for rayon did not reflect the price advance as this did not occur until the end of the month.

Altogether the statistical picture shows improvement but as yet registers only a part of the better outlook.

Textile World's Price Index Numbers

STARTING with January, 1936, TEXTILE WORLD has revised its price index numbers to a 1923-25 base, to correspond with current statistical practices. Figures on cotton manufactures, Aug. 1, 1933 to Jan. 6, 1936 include processing tax.

Date	Cotton Index Numbers: Cotton	Yarns	Gray	Colored	Wool Index Numbers: Wool	Tops	Yarns	Cloth	Silk Index: Raw-Silk	Rayon Index
1923-25	100	100	100	100	100	100	100	100	100	100
1930 ave.	50	61	61	72	58	61	72	90	109	46
1931 ave.	32	68	46	59	46	49	59	71	32	32
1932 ave.	24	37	37	60	36	40	52	57	21	28
1933 ave.	39	56	55	50	53	59	62	80	21	26
1934 ave.	61	67	70	62	63	70	75	91	17	25
1935 ave.	60	68	67	69	56	58	70	88	22	24
1936 ave.	45	63	63	68	72	78	76	93	23	25
1937 ave.	42	65	67	74	79	82	85	107	25	27
Jan. 1938	32	47	49	62	57	63	68	97	21	26
Feb. 1938	33	47	50	62	53	60	67	97	22	23
Mar. 1938	33	47	50	62	51	58	66	88	22	23
Apr. 1938	32	46	49	62	51	57	66	80	22	23
May 1938	31	46	48	62	50	57	64	80	21	22
June, 1938	31	45	47	61	49	57	64	80	21	21
July, 1938	33	48	50	57	53	59	64	80	24	21

Key wool prices with usual comparisons follow:

	Aug. 1 1938	July 1 1938	Aug. 2 1937	Aug. 1 1936
Fine and fine med. territory	$0.65	$0.63	$0.97	$0.84
Ohio ⅜s	.32	.26	.44	.38
Tops fine 64-66s	.90	.88	1.18	1.06
average ⅜s	.75	.72	1.05	.95
high ⅜	.67	.65	1.00	.88
Noils, fine	.60	.58	.75	.68
¼	.45	.43	.58	.53
2-48s 60s wstd yarn	1.35	1.34½	1.80	1.52½
2-32s 56s wstd yarn	1.15	1.14½	.....	.....
8020 serge	1.65	1.65	2.27½	1.82½

Current statistics on wool consumption and mill activity:

	June (4 weeks)	May (4 weeks)
Wool consumed, clean equiv.		
Apparel wool, lb	15,468,000	12,944,000
Carpet wool, lb	3,352,000	3,036,000
Machinery activity (40-hr. shift)		
Looms (50 in. and wider)	62.6%	49.9%
Carpet looms	33.6%	33.2%
Combs	96.3%	80.3%
Worsted spindles	63.2%	52.4%
Woolen spindles	65.3%	54.2%

Key rayon prices and statistics follow:

Prices	Aug. 1 1938	July 1 1938	Aug. 2 1937	Aug. 1 1936
Viscose process				
75 denier (18-30 fils.)	$0.74	$0.71	$0.93	$0.90
100 denier (40 fils.)	.68	.65	.82	.79
150 denier (40 fils.)	.51	.49	.63	.60
Acetate process				
150 denier	.54	.52	.63	.60
Cupra. process				
150 denier (112 fils.)	.52	.50	.68	.65
Rayon staple 1½, 3, 4½ and 5½ den. viscose	.25	.25	.28	Not quoted

Indices of Deliveries* Statistics**	July	June	May
In year, 1938	843	473	445
In year, 1937	696	693	724

*Rayon Organon. Covers 100% data for all processes 1923 to date. Note that acetate is now included. Shipments index for all rayon 1923-25 = 100.

Key silk prices and statistics follow:

Prices	Aug.1 1938	July 1 1938	Aug. 2 1937	Aug. 1 1936
Crack XX 13/15 white 78%	$1.77	$1.81	$1.80	$1.72
Tram, 5thd Japan 85%	2.44	2.45	2.75	2.41
Tram Crack XX 78%	2.36	2.37½	2.43	2.31
60s-2 spun silk	3.00	3.05	3.15	2.95

Statistics	Imports	Approximate Deliveries	Stocks at Warehouses
July, 1938	30,441	32,593	42,305
June, 1938	38,933	31,492	44,457
May, 1938	24,248	28,687	37,016

Fabric and yarn manufacturing margins follow:

TABLE I. CARDED FABRIC MARGIN

Date	Margin in cents	Date	Margin in cents
August, 1933	21.4	May, 1936	14.3
October, 1933	19.1	July, 1936	16.9
January, 1934	18.4	August, 1936	18.0
April, 1934	17.6	September, 1936	18.4
July, 1934	15.3	October, 1936	21.2
August, 1934	16.6	November, 1936	25.4
September, 1934	18.6	December, 1936	28.1
October, 1934	17.4	January, 1937	28.6
November, 1934	15.8	February, 1937	26.2
December, 1934	16.2	March, 1937	25.6
January, 1935	16.2	May, 1937	23.1
February, 1935	16.0	June, 1937	21.2
March, 1935	15.9	July, 1937	20.1
April, 1935	16.1	August, 1937	19.4
May, 1935	16.0	September, 1937	18.1
June, 1935	16.5	October, 1937	17.3
July, 1935	15.2	November, 1937	16.9
August, 1935	17.1	December, 1937	15.7
September, 1935	17.9	February, 1938	16.2
October, 1935	17.7	March, 1938	16.1
November, 1935	16.4	April, 1938	15.9
December, 1935	16.2	May, 1938	15.9
January, 1936	17.2	June, 1938	15.2
February, 1936	16.5	July, 1938	16.5
March, 1936	15.5	July 6	16.1
April, 1936	14.3	July 13	17.0
June, 1936	15.3	July 20	16.5
		July 27	16.5
		July 30	16.6

TABLE II. CARDED YARN MARGIN

Date	Margin in cents	Date	Margin in cents
August, 1933	23.5	July, 1936	15.0
October, 1933	20.0	August, 1936	16.5
January, 1934	18.3	September, 1936	16.5
April, 1934	15.9	October, 1936	17.2
July, 1934	14.6	November, 1936	18.0
August, 1934	15.3	December, 1936	20.6
September, 1934	15.6	January, 1937	20.8
October, 1934	14.6	February, 1937	21.2
November, 1934	13.3	March, 1937	21.3
December, 1934	13.5	April, 1937	22.6
January, 1935	13.5	May, 1937	21.2
February, 1935	13.9	June, 1937	19.3
March, 1935	14.4	July, 1937	17.8
April, 1935	14.1	August, 1937	17.2
May, 1935	13.8	September, 1937	16.1
June, 1935	14.5	October, 1937	15.3
July, 1935	14.3	November, 1937	14.7
August, 1935	15.3	December, 1937	13.7
September, 1935	15.4	January, 1938	13.5
October, 1935	15.8	February, 1938	12.9
November, 1935	16.3	March, 1938	12.9
December, 1935	16.3	April, 1938	12.7
January, 1936	18.4	May, 1938	12.8
February, 1936	17.5	July, 1938	13.3
March, 1936	16.3	July 6	12.7
April, 1936	15.6	July 13	13.6
May, 1936	14.8	July 20	13.6
June, 1936	14.6	July 27	13.4
		July 30	13.4

Key cotton prices with usual comparisons follow:

	Aug. 1 1938	July 1 1938	Aug. 2 1937	Aug. 1 1936
Spot Cotton, N. Y.	8.61	9.01	10.65	12.89
" high previous month	9.21	8.85	13.05	13.65
" low previous month	8.64	7.84	11.18	12.49
10s hosiery cones	18	18	25	25½
10s/2 carded skeins	19½	18½	25	25½
20s/2 carded peeler warps	21	20½	28	29½
60s/2 combed peeler warps	48	48	59	57
60s/2 mercerised cones	63	63	77	68
37 in., 3-yd. drill	6¾	6¾	9¼	8¾
38½-in. 64 x 60s	4¾	4¾	6 7/16	6
36-in. 4 yd. 56 x 60s	5 7/16	5 7/16	7¾	7¾
Denim, 2.20s	10½	11	16	14

Statistics of particular interest to cotton manufacturers concerning operation and the raw material situation:

	June	May
Spindle activity (% capacity)	91.9	89.3
Spindle activity (millions of hours)	5,665	5,449
Cotton consumed (bales)	442,742	425,684
Cotton exported (bales)	175,878	193,000
Cotton imported (bales)	15,184	20,038

Rayon fabric shipment index reported by the National Rayon Weavers Association and the National Federation of Textiles, follows:

1934 = 100	June 1937	May 1938	June 1938
Taffetas, twills, linings and other staples	251	165	189
Dress goods, novelties and other fancies	97	73	62
Total	154	103	105

THE PERSONAL PAGE

Charles A. Knisel who has been associated with Schwarzenbach, Huber Co., New York, as credit and sales manager, was recently elected to the Board of Directors. **Ernest G. Glaesel**, general manager of the company has been named first vice-president.

Walter P. Courtauld and **George Courtauld** have been elected to the Board of Directors of Courtaulds, Ltd., London, England.

Charles S. Schell, Jr., is now associated with Schell, Longstreth & Co., Philadelphia, a firm in which his father had been active for many years.

Leo H. Oppenheimer, resigned Aug. 1 as manager of the downtown wash goods department of Brand & Oppenheimer, New York.

Gerald E. Donaldson, Jr., in charge of merchandising operations for Commercial Factors Corp., New York, has been transferred to a similar post with Commercial Investment Trust, Inc., of which the Commercial Factors Corp. is a subsidiary.

David Frankel, formerly sales manager and stylist of the Goodall Co., New York, has been advanced to the vice-presidency of that organization in charge of styling and distribution. **Gardner Prechtel** has been appointed merchandising director and **Joseph Stevens** has been made sales manager.

Sol Kittay, has been appointed sales manager of the Goldflag Mills, New York, recently organized to combine the sales activities of the Union Underwear Mills and Gardiner-Warring Co. Mr. Kittay has been manager of the underwear department for Butler Bros., New York.

Bernard B. Butler has resigned as vice-president of the Textile Banking Co., Inc., New York, on account of ill health.

Clarence B. Fortescue returned to the organization of Strong, Hewat & Co., New York, on July 25, to resume the management of their women's wear business with which he had been previously connected for a number of years.

William F. Callahan, formerly Boston manager of the New England Waste Process Co., has joined the organization of R. C. Harvey Co., Waltham, Mass., dealers and processors of fibers.

F. B. Todd, director of men's merchandising, Associated Wool Industries, New York, addressed the recent convention of the International Association of Clothing Designers which was held in Baltimore early last month. This is the third consecutive semi-annual convention of this association before which Mr. Todd has spoken.

Louis Condy has been appointed manager of the Chicago office of the American Woolen Co., New York.

Samuel Fein, formerly of the firm of Schmitt & Fein, selling agents, New York, has become associated with the Mayfair Worsted Mills.

E. M. Underwood, treasurer of the Sanford (N. C.) Cotton Mills, is the newly elected president of the Sanford Rotary Club.

E. P. Watson, who retired recently as head of the Watson Mfg. Co., Ltd., of Brantford, Ont., completed 59 years of continuous service in the textile industry. **R. Beattie,** the superintendent, succeeded him.

A. C. Lineberger, president of a large number of textile plants at Belmont, N. C., is the new president of the Belmont Rotary Club.

Textile Calendar

- ***Southern Hosiery Manufacturers Association, annual convention, Grove Park Inn, Asheville, N. C., Sept. 16 and 17, 1938.***
- ***National Exposition of Power and Mechanical Engineering, thirteenth show, Grand Central Palace, New York, Dec. 5 to 10, 1938.***
- ***Industry-wide Hosiery Conference, New York, Jan 18 and 19, 1939.***
- ***Southern Textile Exposition, thirteenth show, Textile Hall, Greenville, S. C., April 3 to 8, 1939.***
- ***Knitting Arts Exhibition, 35th annual show, Commercial Museum, Philadelphia, April 17 to 21, 1939.***

J. H. Mayes, vice-president and manager of the Fitzgerald (Ga.) Cotton Mills, is the new president of the Fitzgerald Rotary Club.

Alfred Booth was elected president of the Ideal Mfg Co., Tilton, N. H., at its annual meeting. **Mrs. Flora F. Booth** was elected secretary and treasurer.

William Skinner, 2d, assistant treasurer of William Skinner & Sons, Holyoke, Mass., has been elected president of the Holyoke Y. M. C. A., 41 years after his father, Joseph A. Skinner was elected to the same post.

Dr. Raphael E. Rupp, (at left) Pacific Mills, Lyman, S. C., chairman of Piedmont Section, American Association of Textile Chemists & Colorists, who presided at the summer outing of his section held recently at Ocean-Forest Hotel, Myrtle Beach, S. C., snapped on the porch of the hotel. Gathering was attended by 300 members and guests who enjoyed swimming, fishing, golf, bridge, horse-racing, etc. At right is H. Grady Miller, Elliott Knitting Mills, Hickory, N. C., treasurer of the section. Winner of low gross at golf was Cliff Meyers of Charlotte and of low net H. W. Causey, also of Charlotte.

H. M. McKelvie, vice-president and general manager of Firestone Cotton Mills, Gastonia, N. C., has resigned. He is succeeded by **Harold Mercer,** formerly assistant treasurer.

Hughston M. McBain, first vice-president of Marshall Field & Co., Chicago, has been elected to membership in the New York Cotton Exchange.

Ben Wright, for many years with Pacific Mills, New York, has recently joined the selling staff of the percale department of the Arnold Sales Corp.

William Six has been appointed fabric technician for the North American Rayon Corp., New York, in addition to his present position in similar capacity with the American Bemberg Corp.

John R. Kenworthy, yarn dealer, Amsterdam, N. Y., has been elected president of the Chatiemac Club, which maintains a private fishing and hunting preserve in the Adirondacks.

Edward L. Whitford, formerly in charge of production and fabric development, for Chopak Textile Co., Inc., New York, has joined the Franklin Rayon Corp., Providence, R. I.

Alfred W. McQuillan, Jr., until recently associated with the Treasury Department in Washington, D. C., has become manager of the Statistical Department of the National Association of Hosiery Manufacturers, New York. He succeeds **Howard C. Hageman,** who has resigned for the purpose of devoting his time to the development of an investment service.

W. V. Gilmore has become superintendent of S. Slater & Sons, Slater, S. C.

Everett W. Skinner, head designer for the last 10 years with the Uxbridge (Mass.) Worsted Mills, has resigned to become styler and salesman for the American Woolen Co., New York.

Theodore A. Haish has been elected managing director of the Industrial Development Legion of New Bedford, Mass., with the object of rehabilitating local industries and introducing new manufacturing enterprises into that area. A

fund of $52,000 has been established for the work.

Russ Pritchard, of the real estate and banking firm, Marx & Bensdorf, was elected president of the Memphis (Tenn.) Cotton Carnival Association. He succeeds **Geo. J. Eckert,** president, 1938 carnival, who becomes chairman of the board.

Fred L. Still has become superintendent of the Mathews Cotton Mills, Greenwood, S. C., succeeding **H. E. Runge,** resigned. Mr. Still was formerly superintendent of the Victor plant of the Victor-Monaghan Co., Greer, S. C. In the interim he was associated with the Greenville office of the Steel Heddle Mfg. Co. He is a past president of the Southern Textile Association.

F. E. Splaine, superintendent of the Gonic Woolen Mill, Gonic, N. H., has been transferred to take charge of the Cocheco Woolen Mill, East Rochester, N. H.

William F. Callahan, formerly Boston manager of the New England Waste Products Co., has become associated with the R. C. Harvey Co., dealers in and processors of textile fibers, Waltham, Mass.

Ralph Alexander is now assistant treasurer of S. Slater & Sons, Inc., Slater, S. C., succeeding **James A. Lybrand, Jr.,** who is now connected with Carter Fabrics Corp., Greensboro, N. C.

Herman Weisz, Auburn graduate of 1938, is now employed at Rock Hill (S. C.) Printing & Finishing Co.

O. A. Kitchens, Jr., is now in the cost department of Callaway Mills, Manchester (Ga.) plant. He was formerly in the offices at LaGrange.

Dwight Wilhelm, secretary-manager of the Huntsville, Ala., Chamber of Commerce for the last three years has resigned to become secretary-manager of the Alabama Cotton Manufacturers Association.

Walter Probst, formerly with Textile Dyeing & Printing Co., and **Louis Campana,** formerly with Jean Rose Dye Works, have joined the Pilgrim Piece Dye Works, Brooklyn, N. Y.

Earl Hood is now overseer of weaving at the Manchester, Ga., plant of the Callaway Mills.

D. E. Carter, night overseer spinning, Springs Cotton Mills, No. 1, Fort Mill, S. C., has been promoted to overseer of spinning, No. 2 plant.

Lake E. Terrell, Jr., who was graduated from the Clemson (S. C.) College Textile School recently, has accepted the position of chemist for the Best Mfg. Co., Gainesville, Ga.

John F. Tinsley, for the last 24 years vice-president and general manager of the Crompton & Knowles Loom Works, Worcester, Mass., who has been elected president of the company, succeeding the late Dr. Homer Gage.

H. P. Walker has been promoted from overseer of spinning, Springs Cotton Mills, No. 2, Fort Mill, S. C., to overseer of spinning, No. 1 plant, Fort Mill.

E. P. Blakeney has resigned as second hand of spinning, Goodyear Clearwater Mills, No. 1, Cedartown, Ga., to become night overseer of spinning, Springs Cotton Mills, No. 1, Fort Mill, S. C.

George Bickel has resigned his position in the finishing department of United Underwear Co., Boyertown, Pa., and accepted a similar position with the Linden Underwear Co., Inc., Lititz, Pa.

J. E. Waldrop has been promoted to the position of overseer of weaving at Dunean Mills, Greenville, S. C.

E. M. Ritche has resigned as superintendent of the spinning department, Sanford (N. C.) Cotton Mills.

Harold A. Griffin, has been promoted to the position of resident manager of the Beaver Brook Mills of the American Woolen Co., Lowell, Mass.

Hugh Patrick has resigned as general superintendent of the Union Bleachery, Greenville, S. C. The management states that his duties will be taken over by **H. B. Mathewson,** superintendent and **E. S. Tillinghast,** assistant superintendent.

Lamar Moore has been promoted from head of the weaving department at Manchester, Ga. unit of Callaway Mills to the position of superintendent of that unit. **Earl Hood,** his assistant in the weaving de-

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The Terrell Machine Co., Inc.

Charlotte, North Carolina

WHITMAN Yarns

MONOMAC SPINNING CO.
LAWRENCE, MASS.

ARLINGTON MILLS
LAWRENCE, MASS.

NONQUITT MILLS
NEW BEDFORD, MASS.

CRAMERTON MILLS
CRAMERTON, N. C.

TALLAPOOSA MILLS
TALLAPOOSA, GA.

WILLIAM WHITMAN COMPANY, INC.
NEW YORK BOSTON PHILADELPHIA CHARLOTTE

partment has been named head of that department.

J. L. Rhinehardt is now overseer of spinning, spooling and warping at Osage Mfg. Co., Bessemer City, N. C. He was formerly overseer of the spinning at Pickett Cotton Mills, High Point.

S. H. Lander, vice-president and assistant treasurer of Gossett Mills, Anderson, S. C., has been elected treasurer of the Anderson post of the Salvation Army advisory board. president of the Rotary Club of Greenville.

J. R. McInvaill, official of the Larkwood Silk Hosiery Mills at Charlotte, N. C., was recently elected president of the Credit Men's Association of the Carolinas.

James Norwood has become manager of the Real Silk Hosiery Mill at Durant, Miss.

Theodore Marshall has become manager of the Cape Charles, Va., Knitting Mills.

L. V. Andrews is the new superintendent of the Cedartown (Ga.) Yarn Mills. He formerly held a similar post at the Martinsville (Va.) Cotton Mills.

Bill Massey, formerly of Greenville, S. C., has become overseer of cloth room at the Victor plant of Victor-Monaghan Co., Greer, S. C.

Charles Verner has become assistant superintendent, Calhoun Mills, Calhoun Falls, S. C.

Roy E. Degan is plant superintendent of Waycross (Ga.) Mfg. Co., a new hosiery firm.

J. A. Rugh of Marion, N. C., is superintendent of the new Rosman (N. C.) Knitting Mill.

T. F. Cuddy, formerly of Mount Holly, N. C., has become superintendent of Pickett Cotton Mills, High Point, N. C.

George C. Furr, superintendent of the full-fashioned division of Adams-Millis Corp., High Point, N. C., will be manager of the company's new unit at Tryon, N. C., and Ed. Armfield, also of High Point, will be assistant manager.

John D. Templeton, formerly overseer of spinning, Springs Cotton Mills, No. 1, Fort Mill, S. C., has been transferred to the spinning department of the Lancaster, S. C. plant.

B. W. Bingham is now superintendent of the Virginia Mills, Inc., at Swepsonville, N. C. He was formerly overseer of carding at Pickett Cotton Mills, High Point.

J. L. Brannon has become superintendent of carding and spinning at Hermitage Cotton Mills, Camden, S. C. He formerly held a similar position with Durham (N. C.) Cotton Mfg. Co.

J. Frank Sentell is now assistant superintendent of the Borden Mills, Inc., Kingsport, Tenn.

D. J. Sickerott, formerly of Pennsylvania, is the superintendent of the Siler City (N. C.) Hosiery Mills.

F. B. McDonald, formerly with the Bibb Mfg. Co., Columbus, Ga., unit, has become superintendent of the J. W. Sanders Cotton Mills, Winona, Miss.

W. P. Stowe, overseer of spinning, Sterling Spinning Co., Belmont, N. C., has been made superintendent of Crescent Spinning Co., Belmont, succeeding the late R. F. Fisher. Mr. Stowe is succeeded by **C. C. Hope.**

Mark H. Crowder, formerly with U. S. Rubber Co., Thomasville, Ga., is now superintendent of J. W. Sanders Cotton Mill No. 3, Meridian, Miss.

L. H. Ferguson is the new night superintendent of printing at the Rock Hill (S. C.) Printing & Finishing Co. He was formerly associated with the Ware Shoals (S. C.) Mfg. Co.

L. L. Hurley has resigned as superintendent of the Marshall (N. C.) Mill & Power Co., to become North Carolina representative for the Carter Traveler Co., Gastonia, N. C., with headquarters at Lincolnton, N. C.

Palmer Deburle, formerly of Cherokee Falls, S. C., is now overseer of carding in No. 1 mill, Gayle plant of Springs Cotton Mills, Chester, S. C.

L. C. Hamrick is now overseer of the weaving department of the Union, S. C., plant of the Union-Buffalo Mills, succeeding the late Fred Sanderson.

W. W. Ricks is manager and head of the finishing department of the new Cranberry (N. C.) Knitting Mills.

J. F. Chambers, superintendent of the Greenwood (S. C.) Cotton Mills, has been elected president of the Greenwood Lions Club.

A. B. Naney, formerly of Henrietta, N. C., has become overseer of night spinning at the No. 1 mill, Gayle plant of Springs Cotton Mills, Chester, S. C.

Frank P. Healy has been appointed to succeed **John A. Young,** recently resigned, at the New York office of Pacific Mills in the wash goods division.

J. B. Crowder is now overseer of carding at Callaway

Mills, Unity plant, LaGrange, Ga.

Marvin Augustus Dickerson, formerly with Draper Corp., Spartanburg, S. C., plant, is now overhauling machinery in the weave room at the Gayle plant of Springs Cotton Mills, Chester, S. C.

Obituary

Dr. Charles H. Herty, nationally known chemist, died at Savannah, Ga., July 27, at the age of 71. Dr. Herty was responsible for the development of the method of making pulp from slash pine, which is forming the basis of an entirely new industry in the South. He had many contacts with the textile industry, one of the most important being in 1919 when President Wilson sent him to Paris to arrange with the Reparations Commission for the purchase of German dyes. He was an apostle of research and took active interest in the progress of the United States Institute for Textile Research. An attempt was made to get him to accept the presidency of that institute but his work in the slash pine development made that impossible. He was a past president of the American Chemical Society and former editor of its *Journal of Industrial and Engineering Chemistry*.

Dr. Chas. H. Herty

Sam C. Moore, aged 67, president of Grace Hosiery Mills, Burlington, N. C., died June 28.

James S. Cothran, aged 69, southern sales agent for Link-Belt Co., died at his home in Charlotte, N. C., last month.

Edgar Holmes, aged 53, connected with the Commodity Credit Corp., as a wool appraiser in Texas and New Mexico, and formerly with the Stillwater Worsted Co., Harrisville, R. I., Hillsboro (N. H.) Mills, and Barre (Mass.) Wool Combing Co., died suddenly in Albuquerque, N. M., on July 28.

Sidney C. McHenry, aged 64, retired agent of the Otis Co., Ware, Mass., died at Hyannis, Mass., last month.

Samuel E. Unger, aged 57, a partner in the firm of the Merit Underwear Co. which he helped to organize in 1912 at Shoemakersville, Pa., died July 11.

Joseph M. Lamport, aged 42, member of the firm of Alexander Lamport & Bro., New York, died suddenly July 15.

George F. Brietz, aged 71, superintendent of the Selma (N. C.) Cotton Mills, for the last 23 years, died July 17 after several months illness.

Paul Mausolff, aged 76, former secretary of Roessler & Hasslacher, a chemical concern absorbed by the du Pont interests eight years ago, died at Innsbruck, Austria, on July 10.

Roscius C. Newell, aged 88, of Palmer, Mass., at one time agent for Bliss Fabyan & Co.'s cotton mills in that area, died last month.

Peter F. Campbell, aged 72, for 40 years a dealer in textile machinery in Philadelphia, died recently.

James P. Quinn, aged 45, former treasurer of the Taylor-Friedsam Co., New York, died recently.

George T. Janicula, aged 45, president of Strong, Hewat & Co., New York, died at his home in Huntington, L. I., July 6.

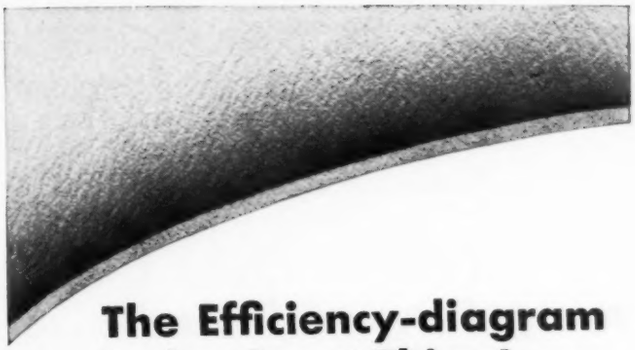
Robert B. Knox, aged 62, identified with Clyde Fabrics, Inc., and the City Cotton Mills, of Newton, N. C., until his retirement because of ill health a year ago, died last month.

Edward Otis Goss, aged 72, president of the Scovill Mfg. Co., Waterbury, Conn., died July 4.

Hatton Langshaw, aged 74, former general superintendent of the Dartmouth Mfg. Co., New Bedford, Mass., died at his home in Granby, Canada, early last month. He retired in 1921.

Alfred S. Morrison, aged 52, secretary of the Textile Labor Relations Board until it was abolished more than a year ago, died at Washington, D. C., July 17.

Alex Goldstein, aged 41, president of the Lambert Tex-



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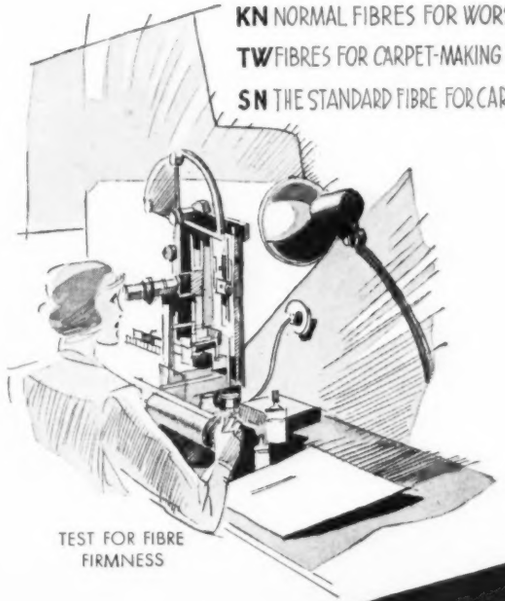
BF FOR PURE 3 CYL. FINE YARNS
BK CURL FIBRE FOR THE COTTON SPINNER
KN NORMAL FIBRES FOR WORSTEDS
TW FIBRES FOR CARPET-MAKING INDUSTRY
SN THE STANDARD FIBRE FOR CARDED YARNS



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AND THE
HARD BUTT
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THE NEW TERRELL TYPE "L"
AIR CLEANING MACHINE
for
SILK, RAYON, FINE COTTON
combines
Maximum Efficiency
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CHARLOTTE, NORTH CAROLINA

tile Printing Co., Paterson, N. J., was killed in an automobile collision near Coxsackie, N. Y., July 19.

Gay D. Thayer, aged 60, for 32 years salesman in the northern cotton territory for Crompton & Knowles Loom Works, Worcester, Mass., died after a long illness on July 6. It was said that in his experience he had covered every cotton mill in New England and Canada. Prior to going with C. & K. in 1906, he had been superintendent of the Graylock Mills, North Adams, Mass.

George E. Emmons, aged 80, who retired in 1924 as vice-president in charge of manufacturing for General Electric Co., Schenectady, N. Y., died in Pasadena, Calif., July 1.

Rudolph G. Johnstone, aged 36, vice-president of Startex Mill, Tucapau, S. C., and general manager in charge of operations at Spartan Mills, Spartanburg, S. C., and Gaffney (S. C.) Mfg. Co., died at the Cherokee county hospital, Gaffney, July 8, of injuries sustained in an automobile accident near Blacksburg.

David Melville Sanson, founder of Dominion Linens, Ltd., Guelph, Ont., died at Toronto, Ont., recently.

Fred S. Little, aged 67, owner and manager of the Little Woolen Co., North Montpelier, Vt., died July 3.

Jacob F. Brown, aged 76, senior partner of Brown & Howe, Boston wool merchants, president of Wuskanut Mills, Inc., Farnumsville, Mass., and of Roxbury Carpet Co., Saxonville, Mass., died at a Boston hospital on July 19.

Sam G. Moore, aged 67, president of Grace Hosiery Mills, Burlington, N. C., died recently.

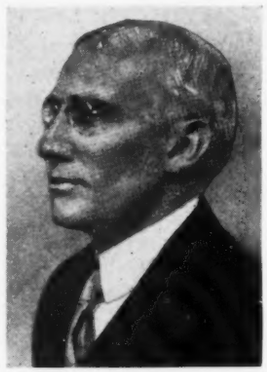
Thos. Neilson, aged 62, vice-president of Brantford (Ont.) Cordage Co., died recently at his home in Stratford, Ont.

Joseph Lepage, aged 55, boiler room superintendent of Cascade Mill, Berlin, N. H., for the last 15 years, died July 5.

L. K. Salsbury, aged 71, at one time head of the world's largest cotton plantation, died at Memphis, Tenn., last month. He organized the Delta & Pine Land Co., Scott, Miss., developed the Merrimac cotton plantation.

Thomas F. Duffy, aged 57, head of the finishing department of the Putnam (Conn.) Woolen Corp., died in a Worcester, Mass., hospital recently.

Laston Harrill, aged 62, manager of the Cliffside (N. C.) Cotton Mills, died recently.



Harry W. Butterworth

Harry W. Butterworth, aged 75, chairman of H. W. Butterworth & Sons Co., Philadelphia, Pa., died Aug. 3 at his former home in Rydal, Pa. He had lived in Sarasota, Fla., for the last five years. Mr. Butterworth joined the company in 1882 and was president from 1907 till 1929. It had been founded by his ancestors in 1820, and his son Harry W. Butterworth, Jr., is now president. Mr. Butterworth, Sr., played an important role developing the textile finishing industry in the South.

John E. Edgerton, aged 58, president of Lebanon (Tenn.) Woolen Mills, and for ten terms from 1921 to 1931 president of the National Association of Manufacturers, died at his home in Lebanon on Aug. 4. He rose to national prominence through his ability as a spokesman for industry.

Frank W. Gorse, aged 72, head of the rubber thread company bearing his name at Needham, Mass., died recently. At one time he manufactured elastic hosiery in Chicago.

Mrs. J. E. Sirrine, wife of J. E. Sirrine, textile engineer of Greenville, S. C., died late last month at her home in that city.

I. R. Ballard, aged 52, superintendent of National Yarn Mills, Belmont, N. C., died in Charlotte after several weeks' illness.

Farrell O'Reilly Coyle, aged 86, Apponaug, R. I., former foreman of the printing department at Windsor Print Works, North Adams, Mass., and honored last year by the State of Rhode Island as the oldest industrial worker in the State, died June 21.

Albert M. Hathaway, aged 84, died June 28 in Raynham, Mass. He had retired as superintendent of the Whittenton Mills, Taunton.

Frank Kilborn, aged 78, former superintendent of the Lawrence Machine shop, Lawrence, Mass., died at Alton Bay, N. H., recently.

MILL NEWS

Cotton Mill News

Sibley-Enterprise Mfg. Co., Augusta, Ga., is completing installation of new long-draft roving and spinning equipment in Enterprise mill.

Swift Mfg. Co., Columbus, Ga., has let general contract to A. K. Adams Co., Atlanta, Ga., for one-story additions to three buildings and improvements in present structures. Cost over $65,000. Robert & Co., Atlanta, are architects and engineers.

Whitehall (Ga.) **Mill** of the Oconee Textile Co., has been purchased by R. N. Fickett and Hugh Hardin, head of Fickett Mfg. Co., Atlanta, Ga., who will remodel and improve at once for new branch mill for manufacture of cotton yarns, mop yarns and heads, and kindred cotton specialties. Equipment will be installed for employment of about 300 persons. Work will include a new hydroelectric power plant. Entire project will cost over $200,000. The plant has been idle since 1935.

Denim Mills, Inc., Boston, Mass., have been chartered for $100,000. James B. Ames, 50 Federal St., is president, and Peter Shuebruk is treasurer.

Dartmouth Mills, New Bedford, Mass., were sold to Crescent Corp., Fall River, Mass., by auction on July 19 for $80,000, and certain personal property sold to Geo. E. McFadden & Bros. for $40,000. Both buyers were holders of mortgages. Powdrell - Dartmouth Corp., the recent operator, may continue the plant in operation if an RFC loan permits. A plan for employees to become joint owners, such as was worked out recently at Aspinook Co., is also under consideration.

Neild Mill, New Bedford, Mass., will be operated for at least one year as result of acceptance of the bid of the group represented by T. T. Anderson of Pawtucket. W. S. Downey, trustee in bankruptcy, recommended the sale, which involves $80,000 cash plus unpaid taxes.

Nashua (N. H.) **Mfg. Co.,** specialist in cotton blankets, is negotiating to lease the Bower Mill, Lewiston, Me., which manufactures popular-price, all-wool blankets. The mill will continue under the supervision of George A. Bower, who started it in 1928. Fred Brown, New York selling agent for Bower, will also become associated with Nashua.

American Thread Co., New York, thread manufacturing concern, has leased the two-story basement building at 215–17 Pryor Street, S. W., Atlanta, Ga., for expansion of its facilities in that city.

Randolph Mills, Inc., Franklinville, N. C., have work under way on installation of additional equipment in their local No. 1 mill, used for cotton flannel manufacture.

Hickory (N. C.) **Fabrics Co.** has been organized with capital of $100,000, to operate mill on upholstery fabrics and allied specialties. New company is headed by George Bisanar, president of Hickory Weavers, Inc., with local mill, and H. C. Cline, Hickory.

Jackson Mills, No. 3, mill, High Shoals, N. C., have completed work of recovering, remodeling and repainting the dwellings of the village.

Morgan Cotton Mills, Laurinburg, N. C., have constructed a community building for the use of the operatives and their families.

Lily Mills, Lawndale, N. C., has begun work on the construction of a new warehouse to replace the one destroyed by fire in July. The new building will cost between $2,500 to $3,000.

Marshall Field & Co., Leaksville, N. C., Spray, N. C., and Draper, N. C., have completed more than 100 dwellings for the operatives.

Long Shoals Cotton Mill, Lincolnton, N. C., has changed over from rope drive to motor drive using three water-wheel generators and one diesel generator.

Mooresville (N. C.) **Cotton Mills** have provided a community building for the operatives and their families by remodeling a residential building near the mill.

Raleigh (N. C.) **Mills Co.,** recently formed to take over the local Caraleigh Mill, has work under way on modernization and improvement in plant, with installation of looms and accessory equipment, and will soon have the mill ready for operation. It will be given over to production of upholstery materials, plushes, etc., with facilities for initial employment of about 300 persons, which may be doubled at a later date.

Leak, Wall & McRae Mill known as the Midway Mill, Rockingham, N. C., had

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MILL NEWS

its mill building erected in 1881 destroyed by fire recently. Mill had been idle for several years.

Canadian Cottons, Ltd., plant at Marysville, N. B., is to be enlarged by addition of 3-story, concrete and brick bleaching plant, 60 x 108 ft. It will be operating in November.

Wool Mill News

Swift River Woolen Co., Stafford, Conn. An item in last issue stated that Phoenix Woolen Co. of Stafford had been dissolved and that the plant had been idle for two years, now being held by the Swift River Woolen Co. The latter company advises us that it purchased the Phoenix plant about three years ago and that the mill is now operating on a full capacity basis, that it has not been closed for two years, and that it has never been closed for more than two or three months at any time since it has been owned by the Swift River Woolen Co. The latter company's main mill in Westerly, R. I., has been one of the most consistently successful mills in the industry.

Collins & Aikman, Inc., New York, report net loss for quarter ended May 29, 1938, of $403,843 compared with profit of $1,236,709 for similar period a year ago.

S. Stroock & Co., New York, reports net loss for first half 1938 of $47,871 compared with net profit of $125,925 for firsts half 1937.

Farr Alpaca Co., Holyoke, Mass., in a reorganization drive elected Henry P. Kendall, of the Kendall Co., to the board of directors, where the company hopes to benefit from his counsel. A stockholders protective committee has been formed.

Shamokin (Pa.) **Woolen Mills Co.,** recently organized, has concluded arrangements for lease of portion of mill of C. K. Eagle & Co., Inc., closed for some time, including 82 looms, which will be converted for woolen manufacture by the new occupant. Theodore Goldfinger will be manager at the mill.

Charlottesville (Va.) **Woolen Mills** is not expanding its dyeing department as recently incorrectly noted in this column, as their present dyehouse is fully equipped to care for their production. There is no new expansion of the company's power house since completion of an enlargement about a year ago.

Brucetown Woolen Mills, Winchester, Va., have made an assignment for benefit of creditors. Following a fire this 100-year-old company was reorganized some years ago and a new plant erected.

Rayon & Silk Mill News

William J. Abrash Co., Fall River, Mass., throwsters, has appointed S. B. Schwartz, 1050 Constance St., New Orleans, La., as exclusive liquidating agents.

Maryland Silk Mills, West Warren, Mass., are in hands of E. S. Newbury, receiver.

Donald J. Smith, Union, Miss., is operator of new silk throwing plant, 102x203 ft., one story. He comes from Pennsylvania.

Doherty & Wadsworth Co., Paterson, N. J., has petioned for reorganization under 77B.

Harmony Mills, Cohoes, N. Y., have been leased in part to a silk print cloth manufacturing concern from New York which will employ 300.

American Viscose Corp., New York, N. Y., plans expansion and improvements at branch mill at Nitro, W. Va., to double the present capacity.

Belmont (N. C.) **Throwing Co.,** lately chartered with capital of $200,000, by A. C. Lineberger and J. M. Hatch, heads of Hatch Full-Fashioned Hosiery Co., Belmont, will begin erection of one-story mill on local site on East Airline St. Cost about $45,000 exclusive of equipment. An air-conditioning system will be installed. W. S. Lee Engineering Corp., Charlotte, N. C., is engineer. Geo. W. Brooks will be superintendent.

Threads, Inc., Gastonia, N. C., has closed its unit at Monticello, Ind., and the machinery has been moved to the Gastonia plant.

Cleveland Cloth Mills, Shelby, N. C., announces plans for installation of 14,000 throwing spindles in addition recently erected.

Industrial Rayon Corp., Cleveland, Ohio, has work under way on initial machinery at large new mill near Painesville, Ohio, in course of erection for a number of months, and expects to have the plant ready for production on a 50% basis early in November. Complete mill is scheduled for

Crepe fabrics handled by SKF-equipped machines

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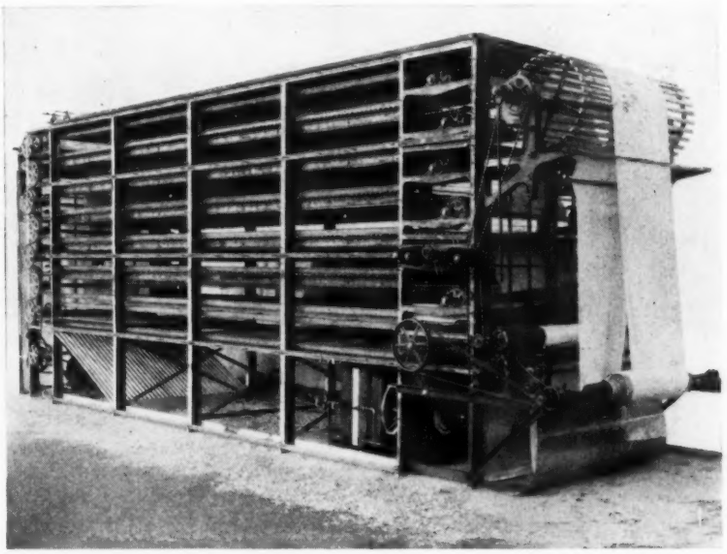

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MILL NEWS

completion in 1939 and will represent an investment of close to $11,000,000. Continuous process machinery is being installed. Company has recently arranged for sale of 4½% bonds at 99 to total $7,500,000, a considerable portion of fund to be used for the new Painesville mill.

Henry Zollinger, Inc., Emaus, Pa., has been organized to take over and operate the silk mill heretofore known as Zollinger & Schroth, Inc. Plant has been idle since early 1937, and will be modernized at once for early operations.

Syntax Fabrics, Inc., Williamsport, Pa., care of McCormick, Herdic & Furst, Williamsport, attorneys, recently organized, plans early operation of a weaving mill formerly the Demarest Silk Co.

Carroll Silk Mill, Hillsville, Va., is erecting a building 110 x 200 ft., one-story. The building and machinery set-up will amount to more than $400,000.

Celanese Corp. of America, Inc., Narrows, Va., has secured an extension of time, not later than March 1, 1939, from the Giles County Chamber of Commerce, Narrows, Va., for beginning work on new multi-unit rayon mill on tract of about 1200 acres of land between Narrows and Perisburg, Va., donated by the Chamber some months ago.

Knitting Mill News

Dothan (Ala.) **Silk Hosiery Co., Inc.,** has awarded contract to C. M. Guest & Sons, Anderson, S. C., for its new one-story mill. An air-conditioning system is planned. Company will be affiliated with a large hosiery manufacturer, name temporarily withheld.

Helena, Ark. — W. R. Spivey, head of the Walridge Knitting Co., Dayton, Tenn., has leased a one-story building on Perry St., Helena, for new hosiery mill.

Lewes (Del.) **Hosiery Mills,** recently organized, have completed construction of one-story mill, 60 x 90 ft. Mill is scheduled for operation by end of August.

Milton (Del.) **Hosiery Co.,** recently organized with capital of $50,000, plans operation of a mill. Incorporators include Walter Schultz and Maxwell Kohl, both of Milton.

Fuller Hosiery Mill, Inc., Newnan, Ga., recently organized with capital of $50,000, has taken over a one-story brick building, and will build a one-story addition, 50 x 55 ft. Initial installation will consist of 25 knitting machines and auxiliary equipment. A. L. Fuller is head.

Providence (Ky.) **Textile Work,** moved to Kentucky from New Jersey to get away from labor troubles, has begun full-time operation.

Propper McCallum Hosiery Co., Northampton, Mass., has elected a new board of trustees, Geo. B. McCallum being the only one to remain in office. H. A. Meyerhoff is chairman. The company may reopen when necessary preparations have been made.

Pequest Hosiery Co., Belvidere, N. J., has built a plant addition to accommodate additional Einsiedel-Reiner knitting machines. This is the third addition of Reiner machines made within the last two years.

Artcraft Glove Corp., Fonda, N. Y., rayon fabric glove branch of Crocetta Bros. Glove Co., of Gloversville, has purchased three school buildings in Fonda which it will occupy on Jan. 1, 1939.

High Rock Knitting Co., Philmont, N. Y., has filed for 77B reorganization.

Stanfield Hosiery Mill, Albermarle, N. C., has been sold to T. L. Morgan by the receiver for $8,160.

Hinshaw Hosiery Mills, Balfour, N. C., have completed an addition which will more than double their floor space. J. R. Hinshaw is owner.

Seven Point Hosiery Mills, Inc., Burlington, N. C., has been chartered for $100,000; W. L. Anderson, J. A. Bowden and C. J. Hickey, are incorporators.

Standard Hosiery Mills, Burlington, N C., have completed the installation of 25 of the newest type Reading hosiery machines. John Shoffner is president.

McKinney Hosiery Mills, Hickory, N. C., has sold its 20 circular knitting machines and discontinued business.

Melrose Hosiery Mills, Kivett Drive Division, High Point, N. C., began operations July 5, but will not be in full production before Sept. 1.

Liberty (N. C.) **Hosiery Mills, Inc.,** recently chartered, have concluded arrangements with Liberty Industries, Inc., for erection of one-story mill, to be occupied under

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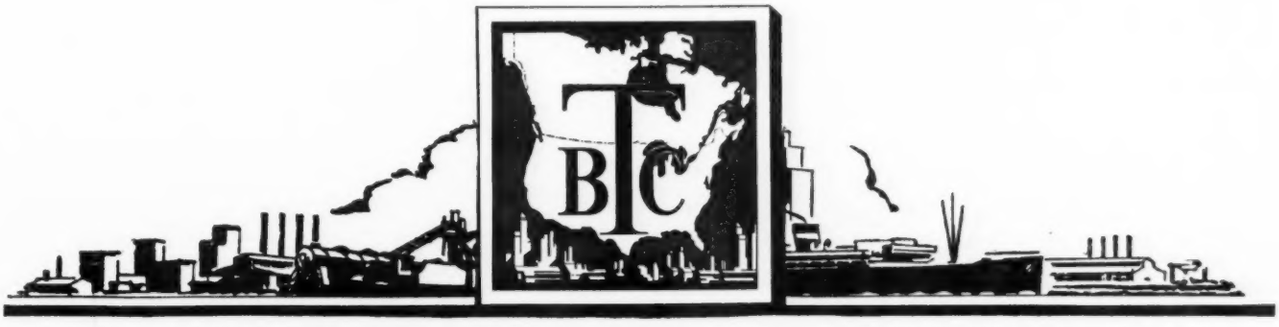

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MILL NEWS

long-term lease. Contract for construction has been let to Fiske-Carter Construction Co., Spartanburg, S. C., and work will begin at once. Initial installation will comprise about 25 knitting machines. An air-conditioning system will be installed. Cost about $35,000, exclusive of equipment. M. B. Smith will be manager.

Mount Holly (N. C.) **Hosiery Mill** has had the former Catawba Spinning Co.'s building renovated and is having 46 knitting machines installed. The machinery will represent a cost of $750,000.

Biltmore Hosiery Co., Naples, N. C., will construct a one-story addition in which six additional full-fashioned hosiery machines will be installed.

Raleigh, N. C.—A new company, formed recently by Philadelphia interests, to operate a hosiery finishing mill, is represented by Frank B. Simpson, Shepherd Bldg.

Excella Hosiery Mill, Stanfield, N. C., is considering early rebuilding its mill recently destroyed by fire. Loss estimated at $45,000.

Stanfield (N. C.) **Hosiery Mill,** operated by T. B. Mauney, receiver, for a number of months, has been acquired by new interests, headed by T. F. Morgan, Albermarle, N. C.,

Pilot Full-Fashioned Hosiery Mill, Valdese, N. C., has constructed an addition 60 x 80 ft. The company is installing six machines in its silk throwing plant.

Hanes Hosiery Mills Co., Winston Salem, N. C., are not constructing a mill addition as erroneously reported in this column in June. A somewhat similar addition to that described was completed by the company a year ago.

Hulmerville (Pa.) **Hosiery Co.** was sold at auction as result of bankruptcy proceedings on July 14, for total of $39.200. Included were 17 ff. machines of 39, 42 and 45 gage.

Albert M. Green, Milroy, Pa., is installing four new knitting machines and adding 25 employees.

Berry Bros. Co., Phoenixville, Pa., has removed machinery from local plant to new one-story mill, 20x100 ft., on North Main St., Smyrna, Del., where operations will be conducted. Joseph J. Berry will be manager at the local mill.

S. & F. Hosiery Mills, Inc., Dayton, Tenn., will operate seven full-fashioned machines and auxiliary equipment in its newly established mill, owned by Walter Schroeder and William Forstein.

Tubize-Chatillon Corp., Hopewell, Va., is installing new high-speed warp knitting machines.

Cranberry Mfg. Co., Hillsville, Va., plans new power substation on site near hosiery mill.

Crewe (Va.) **Hosiery Co., Inc.,** with maximum capital of $100,000, has been charted to manufacture and deal in hosiery and other goods. H. B. Johnson, of Crewe, is president.

Monroe Mills, a subsidiary of Vanity Fair Silk Mills, opened for business at Monroeville, Ala., June 22.

Processing Plant News

Lowell Bleachery South, Griffin, Ga., is installing equipment in a new three-story addition, 102 x 110 ft., recently completed. Work also has been completed on a new boiler house, 50 x 175 ft., at the mill. Entire project represents investment of about $100,000.

Congress Piece Dye Works, Paterson, N. J., lately formed, has taken over portion of the old Strengs Piece Dye Works. Harry Stonely will be in charge of production.

Empress Fabrics Finishing Co., Inc., Paterson, N. J., has been formed to acquire plant of Cheslyn Piece Dye Works, Chester, Pa. It is owned by E. C. DeNapoli and Cornell H. Newcombe will head the New York office. Plant is equipped to process rayons and mixtures.

Silver Spring plant of **U. S. Finishing Co.,** Providence, R. I., is in the hands of McCord-Greene, Inc., New York, as liquidating manager. Both real estate and finishing machinery are being sold.

United Piece Dye Works, Lodi, N. J., is liquidating certain of its properties as follows: a plant at Lodi through Bergen County Industrial Corp.; properties at Paterson and Hawthorne through New Jersey Properties, Inc. Edwin Farnum Greene is president of the two liquidating companies. United's plant A at Lodi is reported operating full time.

Hanes Dye & Finishing Co., Winston-Salem (N. C.) has completed a new gray goods warehouse.